JPRS 76913

2 December 1980

China Report

ECONOMIC AFFAIRS

No. 100

FBIS FOREIGN BROADCAST INFORMATION SERVICE

NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

PROCUREMENT OF PUBLICATIONS

JPRS publications may be ordered from the National Technical Information Service, Springfield, Virginia 22161. In ordering, it is recommended that the JPRS number, title, date and author, if applicable, of publication be cited.

Current JPRS publications are announced in Government Reports Announcements issued semi-monthly by the National Technical Information Service, and are listed in the Monthly Catalog of U.S. Government Publications issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Indexes to this report (by keyword, author, personal names, title and series) are available from Bell & Howell, Old Mansfield Road, Wooster, Ohio 44691.

Correspondence pertaining to matters other than procurement may be addressed to Joint Publications Research Service, 1000 North Glebe Road, Arlington, Virginia 22201.

JPRS 76913

2 December 1980

CHINA REPORT

ECONOMIC AFFAIRS

No. 100

CONTENTS

NATIONAL POLICY AND ISSUES

Research, Application of Quantitative Economics Stressed
(Wang Chenglong; ZHEJIANG RIBAO, 6 Sep 80) 1

Implementation of Piece Rate Wage System Urged
(Zhou Jing; ZHEJIANG RIBAO, 6 Sep 80) 4

ECONOMIC PLANNING

Economic Zones in Guangdong Promote Four Modernizations
(NANFANG RIBAO, 4 Sep 80) 8

Guangdong Expands Decision-Making Power of Enterprises
(ZHONGGUO XINWEN, 14 Aug 80) 13

FINANCE AND BANKING

Overall Economic Accounting Should Be Done Well
(Li Genchang; TIANJIN RIBAO, 26 Aug 80) 16

FOREIGN TRADE

Suggestions Made for Increasing Fujian's Foreign Trade
(GUOJI MAOYI WENTI, Sep 80) 21

Pros, Cons of Compensatory Trade Discussed
(Chen Xuecheng; GUOJI MAOYI WENTI, Sep 80) 32

TRANSPORTATION

Technological Reform of Highways Urged
(GONGLU, 25 Mar 80) 36

Rebuilding Trunk Line Highways in Shandong Planned
(GONGLU, 25 Mar 80) 44

Increasing Highway Building Said Essential to Economic Development
(Liu Chengxian; GONGLU, 25 Mar 80) 51

Plans To Rebuild Shanxi's Highways Outlined
(Liu Dayuan; GONGLU, 25 Apr 80) 55

Goals of Highway Modernization Outlined
(Pan Qi; GONGLU, 25 May 80) 67

Briefs

Tibetan Highway Society 73
Guangzhou-Foshan Highway 73
U.S. Professor Holds Class 74

NATIONAL POLICY AND ISSUES

RESEARCH, APPLICATION OF QUANTITATIVE ECONOMICS STRESSED

Hangzhou ZHEJIANG RIBAO in Chinese 6 Sep 80 p 3

[Article by Wang Chenglong [3769 2052 7893]: "Attention Should Be Given to Research on and Application of Quantitative Economics"]

[Text] Most recently, some ten specialists and scholars held a symposium in Peking and proposed that effective measures be adopted for carrying out research on and practical application of quantitative economics in economic work in order to serve socialist construction. This is highly essential.

Quantitative economics is an effective tool that must be grasped in economic reconstruction. It makes use of the methods of modern mathematics, mathematical statistics and electronic computers to carry out comprehensive study and analysis of the quantitative dependend relationships among the various sectors of the national economy. It also makes use of a type of scientific method for the comprehensive ratio of reproduction. By means of quantitative economics, we can come to an even deeper understanding and mastery of complex economic phenomena and their objective regularity in order to weigh advantages and disadvantages, consider the relative importance of losses and gains, estimate trends that have not yet developed, propose optimum plans and expand economic effectiveness.

As socialized production and science and technology develop, the connections between technology and economy in the various sectors of our national economy become more complex and become closer. There are direct and also indirect relationships among them. That is, there are vertical relationships and there are also horizontal relationships. There are favorable relationships and there are adverse relationships. These all form a complex and involved set of chain relationships. For this reason it is difficult to engage in penetrating research on and to master the interdependent quantitative relationships among the various sectors of the national economy by relying solely on the directly perceived experiences of people and on ordinary social economic statistics. Rather, we must avail ourselves of the methods of modern applied mathematics (such as matric algebra, mathematical programming, probability theory and mathematical statistics, mathematical statistics and network method) and electronic computers. For example, when we are carrying out planned compreshensive equilibrium, quantitative economics must be applied to the indirect consumption of products. For example, it is very difficult to obtain a clear answer to such questions as how much food and cotton are needed to produce an automobile, how much steel, wood and cement are needed to produce a ton of food and other such indirect requirements on the basis of existing methods of calculation and of direct perceived personal experience. For this reason, we must avail ourselves of quantitative economics, which is based on higher mathematics. The mathematical method is an important method of understanding which Engels called a "supplementary tool and mode of representation of dialectics." Marx went so far as to hold that "It is only when a science has successfully applied mathematics that it can be considered to have arrived at a point of perfection." If we are to perfect socialist economics, we must apply modern mathematics. If we do not, it will be very difficult for us to arrive at correct understandings of and solutions to many complex economic phenomena and economic problems.

Why is it that the state has for many years expended a great amount of money in our economic work and has achieved very poor economic effects? One reason for this is that some of our leaders and industrial managers lack scientific minds and neglect mathematical analysis and research in economic movements, relying solely on assumptions, subjective suppositions and individual will in handling work. There have been several major construction projects in which decisions were made and that were started blindly and carried out carelessly without first clearly ascertaining the complex economic relationships within a sector or the resources, water sources and geological conditions in a region and without first having carried out adequate and reliable quantitative calculations and analyses. This has resulted in some projects having to be moved either after having been started or after construction because of a lack of water sources. After some projects have been completed, it has been discovered that the problem of raw materials cannot be solved. In the cases of other projects, severe sinking and cracking have occurred after construction was completed, with large amounts of capital having to be expended to reinforce them. All of these instances resulted in immense economic losses for the nation and the people. This situation indicates that there is a serious deficiency in out technical and economic viewpoints. The principal manifestation of this deficiency in our technical and economic viewpoints is not giving serious regard to quantitative economics.

The objective laws of economic movements demonstrate that quantitative economics has an extremely broad range of applications in the spheres of both macroeconomics and microeconomics. At present, there are close to 100 countries in the world in which an economical mathematical model, i.e., the "put into production method" (the origin of the "put into production method" was introduced in the 18th issue of this publication) is being used prepare various types of economic equilibrium tables for the purpose of strengthening economic analysis, carrying out economic predictions and bringing about the modernization of economic management. The "sector relations equilibrium method," which has been carried out on a trial basis in our nation, also had its origin in the "put into production method." However, in the past, because of the influence of the ultra-left trend of thought and the interference of Lin Biao and the "gang of four," quantitative economics was unanalytically labeled as being a capitalist school of economics, for which reason quantitative economics has for a long period been in a state of stangnation in this country. In order to accelerate the Four Modernizations, we must intensify our study of, research on and application of quantitative economics. Our nation is a socialist nation. The socialist system is superior to the capitalist system and we can certainly apply quantitative economics more broadly and more effectively than could a capitalist nation in further promoting the expansion of socialist economics.

10019
CSO: 4006

NATIONAL POLICY AND ISSUES

IMPLEMENTATION OF PIECE RATE WAGE SYSTEM URGED

Hangzhou ZHEJIANG RIBAO in Chinese 6 Sep 80 p 3

[Article by Zhou Jing [0719 4842]: "A Piece Rate Wage System Should Be Put Into Practice"]

[Text] The so-called piece rate wage system is remuneration for labor that is payed on the basis of the quantity of up-to-quality product completed by the producer or on the basis of the assigned quantity and of the piece unit price that is determined in advance. It has two distinct characteristics. First, it can comparatively accurately reflect the actual labor output of the laborer, and, second, it can make a direct connection between the results of labor and remuneration. On the basis of the present production conditions and technical level of the industrial enterprises in our nation, of objective economic laws and of the requirements for establishment of modernization, we must put the piece rate wage system into practice. However, at present there is very great resistance to putting the piece rate wage system into practice. There is only a very small number of units that have put it into practice. This is a problem that must be studied and resolved.

In Marxism, it is recognized that the distribution of consumer goods in any society "is no more than the result of the conditions of production themselves, i.e., that production determines distribution. It cannot be denied that among the over 300,000 industrial enterprises in the nation, there are some industries with advanced technological equipment, having a comparatively high degree of automation, coordination and using assembly line methods in their production process in which piece rate remuneration is not suitable. However, in the greater majority of industries, the extent of mechanization of industry is comparatively low, there being many types of work among industrial processes in which individual manual operations must be relied on or in which the machinery is directly operated by the workers. In these cases, the quantiy of production, the quality of the products and economic effectiveness depend to a great extent on the technical level, the degree of skill and the intensity of labor of the individual worker. Therefore, it is necessary to put the piece rate wage system into practice in this sector of industry or type of work so that the distribution of consumer goods conforms to the "distribution of production conditions themselves." In implementing the piece rate wage system, the income in wages of industrial staff and workers is directly linked with the results of labor so that it becomes more possible to bring the initiative of industry into play, to arouse a positive spirit among the staff and workers, to promote the expansion of production and to make practical increases in economic effectiveness.

To this end, we must "prepare the public" for implementation of the piece rate wage system.

We must have a thorough knowledge of the quality and effects of the piece rate wage system in a socialist system. Because the piece rate wage system has its origin in capitalist society and because is clearly serves to deepen capitalist exploitation as well as because of the fact that Lin Biao and the "gang of four" vilified the principle of distribution according to work, various accusations have been lodged against the piece rate wage system with the result that there are some industries and sectors in which there is a fear of putting the piece rate system into practice. These are fetters that hamper putting the piece rate wage system into practice and must be thoroughly smashed. It should be acknowledged that, under a socialist system, labor power is not a commodity and the piece rate wage system is not a mode of transformation of the price of the labor force. Therefore, the quality and effects of the piece rate wage system is basically different than under a capitalist system. Here, the piece rate wage system not only does not manifest itself in exploitative relationships, but, on the contrary, embodies a socialist distribution relationship among the nation, the collective and the individual and is a scientific mode of remuneration for labor in which the principle of distribution according to work. At present, the Party Central Committee is calling for liberation of thought and relaxation of policy in order to activate the economy. We should break our mental chains, enter deeply into practice, carry on investigation and research, summarize our experiences and actively put the piece rate wage system into practice.

We must earnestly strengthen industrial management and administration. In putting the piece rate wage system into practice, we must fulfill industrial production missions, make complete records of source materials, set quotas that can be carried out reasonably and have strict quality testing. In a word, industry must have a scientific administration system. However, because many industries at present do not have solid basic management, do not set the level of quotas accurately, do not fulfill their missions and do not produce stable products, they are deficient in the conditions for putting the piece rate wage system into practice. This situation of "having smoke without fire and of looking at the blue sky with the white of the eyes" must be changed quickly. We must get a firm grasp on industrial reorganization and standardize all the basic management work of industry, including original records, calculations and statistics, setting of quotas and administration, technical operations, servicing of equipment, safe production, civilized production and unit economic accounting through rules, regulations and systems. These matters should be finalized and the system of personal responsibility should be applied to individuals so that there will be a firm basis for putting the piece rate wage system into practice. Of course, implementation of the piece rate wage system is also an important measure for strengthening and improving industrial management and administration. We should be sure not to oppose implementation of the piece rate wage system to and a low level of management. Nor with this as a reason should we negatively await the level of industrial management to rise. The correct attitude is as follows: We should set out from the existing management base, distinguish between various types of conditions and adopt different types of piece rate wages. For example, in the case of an industry with sound management systems, with progressive and rational setting of labor quotas and with a stable product, we can adopt a direct, unlimited piece rate system. In the case of an industry in which there is provisional setting of quotas, trial setting of quotas or in which primary estimation of work and setting of quotas is being carried out, we can adopt a mode of limited piece rates. In the case of an industry in which objective conditions are comparatively poor and in which the production products are temporarily not stable, we can adopt an above quota piece rate system. In addition, in the case of an industry in which there are complicated personnel structures with differences in wage levels, a semi-time rate semi-piece rate system can be adopted. At the same time, in industries and types of work in which there are many manual operations, in which setting of labor quotas can be applied to the individual and in which the results of labor can be calculated directly, an individual piece rate system can be adopted. In industries and types of work in which there is a comparatively high degree of mechanization, in which there is a comparatively fine division of labor and in which the setting of labor quotas can only be applied to the workshop or unit, a collective piece rate system can be adopted. In summary, we should maintain a positive attitude, set up the optimum system for any given plant and put it into effect gradually, continually perfecting and improving it in practice.

If we are to reform our existing economic system, we must create good conditions for industry. There is another major reason why the piece rate wage system is at present not expanding. This is because the existing economic management system is not suited to it. For example, at present there are still large numbers of tasks of arrangement that are borne by industry. If an industry is to implement a piece rate wage system, then the hiring and dismissal of workers and staff must be based on the actual requirements of production, with the result that a contradiction arises with arranging work. The problems in these economic management systems must be solved by reforming the economic system. Most recently, the Central Committee has formulated the basic means for solving the labor employment problem which will create favorable conditions for implementation of the piece rate wage system by industry. Industry should actively assume the responsibility of arranging tasks, open up wide avenues for production and employment and through the rational allocation of the labor force give free reign to the subjective dynamic actions of the people. At the same time, ideological and political work must be strengthened, a communist work attitude must be promoted, cooperation in production must be done well and there must be strict observation of labor discipline and the rules of technological procedures. In this way, we can ensure the implementation of the piece rate wage system. It is only in this way that we can give free play to its economic lever action in order to create even higher labor productivity for establishing socialist modernization.

10019
CSO: 4006

ECONOMIC ZONES IN GUANGDONG PROMOTE FOUR MODERNIZATIONS

Guangzhou NANFANG RIBAO in Chinese 4 Sep 80 p 1

[Article: "There are Methods That Can be Depended on, There are Rules That Can be Followed and There are Clear Objectives for Doing a Good Job on the Special Economic Zones for Further Serving the Four Modernizations; Questions Relating to the "Ordinance on Special Economic Zones in Guangdong Province' Asked by Reporters and Answered by Responsible Persons of the Provincial Economic Special Zones Management Committee"]

[Text] A responsible person from the Guangdong Province Economic Special Zones Management Committee was interviewed by a reporter on problems relating to the "Ordinance on Special Economic Zones in Guangdong Province," with the following conversation having occurred.

Question: At the 15th session of the Standing Committee of the Fifth National People's Congress, the "Ordinance on Special Economic Zones in Guangdong Province" was discussed and approved. What is the significance of the public announcement of this ordinance for the establishment of special economic zones in Guangdong.

Answer: Its major significance lies in the fact that a statute has been established. An ordinance of a province is submitted by the State Council to the Standing Committee of the National Peoples Congress for determination and approval. This in itself indicates its great significance. If we say that everything relating to the three special zones in Guangdong before the legislation fell under the category of preparatory work, then the public announcement of the ordinance means that the establishment of the special zones has been formally inaugurated. The ordinance is an overall regulation. Now that we have this overall regulation, that it has been approved and that the legislative procedure has been completed, the special zones can, on the basis of the principles set out in the ordinance, be applied to various activities for the expansion of foreign economic cooperation. At the same time, a series of concrete methods of execution has been formulated in the spirit of the ordinance so that there can be methods that can be relied upon and regulation that can be followed in establishing the special zones. At present, the forces for doing this work are being organized and active progress is being made.

Question: Can you discuss the process whereby the ordinance was formulated?

Answer: The setting up of special zones in Guangdong was a part of the major policy decision of last year in which the Central Committee of the Chinese Communist Party and the State Council approved of Guangdong Province implementing special policies and flexible measures for foreign economic activities. In order to implement the directive of the Central Committee, drafting work on the ordinance was begun in August of last year. In the course of drafting and revising the ordinance over a period of a year, relevant data were gone over to the greatest extent possible and specialists in the sphere of economics, responsible persons in concerned sectors and persons from economic circles in Hong Kong and Macao were invited to many conferences. After eleven revisions of the draft of the ordinance, it was in principle adopted by the second session of the Guangdong Province People's Congress in February of last year. Following that, many deliberations and revisions were made. The State Council gave very serious consideration to this and called together more than 10 concerned sectors for the purpose of carrying out conscientious discussions of revisions. It was then submitted to Standing Committee of the National People's Congress. It can be said that the formulation of the ordinance was very earnest and conscientious and was advanced on the basis of detailed study of relevant conditions in the sphere of international economic activity and of the actual circumstances in our nation.

Question: What is the principal content of this ordinance and what are its outstanding characteristics?

Answer: The ordinance is permeated with the spirit of friendly cooperation and preferential mutual benefit. The ordinance stipulates that the special zones provide a broad range of management for foreign citizens, overseas Chinese and our compatriots in Hong Kong and Macao, that it create favorable conditions for business and that it assure a stable site for carrying on business so that all industries of positive significance in international economics and in the exchange of technology, agriculture, animal husbandry, aquatic breeding, residential and construction industries, high technology research and technology industries and other businesses with which we have common interests can be set through investment or through joint investment with us. That is to say, the sphere and items of economic cooperation that the special zones and various businesses involve are extremely broad. All that is necessary is that both sides have interest and that something is advantageous to both sides. In that case, the special zones will wholeheartily welcome these ventures. Moreover, they will provide favorable conditions for land use, management of foreign exchange and taxes. It will also provide as much convenience as possible for personnel and import of goods.

Question: What is a special zone? What kind of special zones must we establish?

Answer: At present, there are people both inside and outside the province who do not understand special zones. As soon as they hear that Guangdong is going to have special zones, they think that all of Shenzhen, Zhuhai and Shantou are "special zones." In actuality, what we mean by special zones is that certain regions in these three cities have been singled out to serve as special zones. In some ways, they are like the "export processing zones" in some nations and regions of the world. These zones are areas that have been set apart for bringing in foreign capital in which investments are made in setting up factories and running various types of processing industries. However, the export processing zones in foreign countries are comparatively one-sided. The range of business that is carried out in our special zones is much broader and is comprehensive in character. To speak of the Shenzhen Special Zone, the plan for this region is primarily for industry, while at the same time tourism will be developed, trade and service industries will be run and residences and sites for farming, animal husbandry and aquatic breeding production will be established.

In accordance with the spirit of adopting special policies and flexible measures for foreign economic activities, favorable conditions will be given for investors so that as much convenience as possible will be provided for investors, with every possible means being taken to bring in foreign capital, technology and equipment. It is our feeling that we can be somewhat lenient about various conditions as long as sovereignty is in our hands. This is because it is only by relaxing conditions to some extent that we can make conditions attractive and get things going faster.

Question: What is the objective of the special zones?

Answer: Our special economic zones, which are under the management of the people's government, are a means of supplementing the socialist economy. They bring the characteristics of Hong Kong and Macao, which are neighbors of our province, with their large number of overseas Chinese into full play and they are a major means for making full use of foreign capital in the service of the Four Modernizations. Our basic objective in setting up the special zones is, through these specially designated zones special measures, to attract foreign capital more effectively, to bring in equipment and technology, to summarize experiences in management and administration and to train qualified personnel in various areas in order to promote service to the Four Modernization in our country. Once we are clear about our objectives, this will enable us to bring about the close integration of our management of our special zones with our strategic goal of realizing the Four Modernizations so that we will not get off course. This point is very important.

Question: After a year of investigation and research, what changes do you think there have been in the regions of the three special economic zones of Shenzhen, Zhuhai and Shantou?

Answer: Preliminary program blueprints have been made for the three special economic zones. After close to a year of study, the plans for the three special zones have more scale and are closer to reality than the first conceptions. To take the Shenzhen Special Zone as an example, it was the original idea to set apart a certain region in the Futian Commune as a special zone. As the result of a year's study by specialists in various fields and after having developed various plans and having compared them, a preliminary determination was made on the scope of the plan for the Shenzhen Special Zone which was that it would start in the east at Daxiao and Meisha and extending westward to Nantou and Shetou over an area of more than 300 square kilometers. The construction of the special zone as a whole will be carried out by taking the measures of "overall planning and execution by region and by stages."

At present, the first phase of the development engineering of the Shenzhen Special Zone is concentrated primarily from Luohu East Station to the north of Wenjin ferry, within 0.8 square kilometers to the south of the Laocheng district. Plans are under way to develop the area to the west of the Laocheng district as an industrial zone. At present, an earth-leveling project is getting underway and several factories are already being built. At the same time, there are also plans to develop such regions as Shenzhen Reservoir and the Meisha seashore as tourist regions. Several large design institutes from throughout the nation have sent outstanding engineers and technicians to Shenzhen to take part in planning and design.

Question: What are some of the major aspects of the first stage project at Luohu?

Answer: First, there is the basic construction project of the "four openings-up and the one leveling" (getting in water, putting in electricity, opening up roads and opening up communications and leveling the ground). These jobs are now being started. There still remain the expansion and reconstruction of Luohu East Station and Wenjin Ferry. We are also making every effort to change the complexity and the confusion of export procedures as quickly as possible. At the same time, we are also building a few high-storied bazaars and writing buildings as well as a peace and happiness center and a bar. With hard work, we'll be able to make the Luohu District into a commercial and service industry zone within two or three years.

Question: What difficulties and problems have been encountered in building the special economic zones?

Answer: In the course of building the special zones, it is necessary for there to be a single process from revising any existing systems that are not in conformity with the special zones oridinance and gradually formulating various types of detailed rules and regulations for implementation to improving the basic construction of the city so that various aspects can become suited to the development of special zone industries. In this process, it is hope that it will be possible to obtain the cooperation and energetic support of the public figures who are concerned with the establishment of the special zones in their various aspects. At present, it appears that a number of difficulties and problems are sure to be met with in the course of building the economic zones. However, we can be assured that all of these difficulties and problems can be resolved. Those public figures who understand the process of planning and preparing the special zones are fully confident about building and developing the special zones.

10019
CSO: 4006

ECONOMIC PLANNING

GUANGDONG EXPANDS DECISION-MAKING POWER OF ENTERPRISES

Hong Kong ZHONGGUO XINWEN in Chinese 14 Aug 80 p 2

[Article: "First Effects of Expansion of Independent Initiative of Enterprises in Guangdong Province"]

[Text] (China News Service, Guangzhou, of 13 August): A few days ago, Yuan Ying [0626 3841], vice chairman of the Guangdong Province Economic Committee, answered a reporter's questions concerning problems of expansion of decision-making power of enterprises in Guangdong Province.

Question: When did Guangdong Province begin expanding the decision-making power of enterprises? To what extent is this being done at present?

Answer: Since September of last year, two groups throughout the province totaling 179 enterprises have been designated as test units for expansion of enterprise decision-making. These test unit enterprises are for the most part light textile industries and chemical industries which are the backbone industries of this province. The value of the output of these industries accounts for more than 40 percent of that of local state-managed industries in the province as a whole, while their total profits amount to over 80% of those of local state-managed industries in the province as a whole.

Question: What is the nature of the expansion of decision-making power of enterprises?

Answer: On the basis of the stipulations of the State Council and the Provincial People's Government, the principal rights extended to the test unit enterprises are the following: (1) Some personnel rights in that the test unit enterprises can appoint and dismiss middle-level below middle-level cadre; (2) some production planning rights and some product sales rights, i.e., with the prerequisite that the state plan has been completed, on the basis of the state of demand in the market they can organize production outside the plan and the products for which production has been increased can be purchased by the commercial, foreign trade or commodity sectors or can be sold by the enterprises themselves; (3) some financial rights in that they can put into effect a profits retention system, the enterprise being able to use the portion retained as it sees fit; (4) the rights to recruit workers and to choose preferential recruitment; (5) the right of rewards and punishments.

Question: What have been the effects in enterprises in which in which decision-making has been expanded?

Answer: The work of expanding the decision making of enterprises in the test units is an important aspect the reform of China's economic management system. From the standpoint of practice in Guangdong for close to a year, the expansion of the decision-making power of enterprises has involved the implementation of the principles of linking rights and responsibilities and of linking rights and interests. It has brought about the integration of the interests of the state, the enterprises and the individual, causing the enterprises to begin to have their own internal economic motive power, arousing the socialist enthusiasm of the enterprises and their workers and staff, strengthening the management of the enterprises and bringing about increased production and increased income. The majority of the test unit enterprises has achieved the objectives of greater gains for the state, greater retention for the enterprises and greater benefits for the individual.

In state managed enterprises in which decision making power has not been expanded, appointment and dismissal of personnel, allocation of labor power, production planning, supply of raw materials, selling of products, basic construction and purchase of equipment are all arranged by the state. If an enterprise suffers a loss, it is made up by the state. If a profit is made, it is all handed over to higher levels. Thus, the enterprises have relatively no decision-making power of their own and also do not assume any economic responsibilities. After the decision-making power of an enterprise has been expanded, speaking in terms of distribution, retention of profits is instituted. Thus, when there are large profits, "the water rises and the boat rides high." When there is a relatively large increase in retention, there are also corresponding increases in the collective welfare and bonuses for the staff and workers. The enterprise can use the retained capital to expand production. This is beneficial for arousing the enthusiasm of the enterprise and its staff and workers for managing production. The profits realized by the first group of [illegible] test unit enterprises last year were 8.6 percent over plans. In the first half of this year, there was an increase of 30.46 percent in the total profits of [illegible] enterprises as compared to the same period for the previous year. From the standpoint of enterprise management, the initiation of economic methods in the management of enterprises strengthened economic accounting. From the standpoint of production and circulation, production can be organized on the basis of market demand and the enterprises can sell many of their products themselves. This spurs the enterprises into taking every possible means to raise the volume of production, to increase the varieties and types of products and to produce products that are suited for sale and that meet needs with the result that the turnover of capital is accelerated. From last year to May of this year, the light industries in Guangzhou City have completed a total of more than 6800 research projects on new varieties, new products and new technology. These have activated the economy and the markets.

At present, the majority of "test unit" enterprises reflect the following points. There is the necessity for further expansion of the substance of decision-making by enterprises. There are some matters of jurisdiction that have not yet been implemented and the management systems in some sectors of the people's economy that have not yet been reformed. Objectively, this restricts the expansion of decision-making on the parts of enterprises. There must be conscientious summarization of experiences concerning these matters so that improvements can be made.

10019
CSO: 4006

FINANCE AND BANKING

OVERALL ECONOMIC ACCOUNTING SHOULD BE DONE WELL

Tianjin TIANJIN RIBAO in Chinese 26 Aug 80 p 3

[Article by Li Tenghang [2621 2704 7022]: "Conscientiously Doing a Good Job of Overall Economic Accounting"]

[Text] Conscientiously doing a good job of overall quality management, overall economic accounting and overall personnel training (referred to in brief as the "three overalls") are powerful measures for raising the quality of products, for lowering the costs of products, for raising the overall level and vocational capabilities of workers and staff members and for improving industrial management. At present, there are several industries that have obtained various experiences in the course of implementing the "three overalls." However, there are several industries that have not been able to give them serious attention and that have not exerted themselves in carrying them out. In particular, insufficient attention has been given to overall economic accounting. In some cases, the nature of overall economic accounting is not understood so that it is very difficult to carry it out in a comprehensive way in work. In some cases, it is thought that economic effects come from work not from calculation, that is, if calculations are not made, something is done in a certain way and calculations should also be done in a certain way. For this reason, accounting is not done conscientiously. These problems are impeding the practice of overall economic accounting and must be resolved conscientiously.

Why is it called overall economic accounting? This question requires a thorough inquiry. Generally speaking, I believe that it is overall personnel accounting for labor consumption, labor use and labor results in the course of simple reproduction and expanded reproduction and that it is an effective method using economic means to manage modernized industrial enterprises. Its content is extremely broad. To put it in the language of the workers, "What you are doing and what you are managing are what you reckon." On the basis of actual practice in a number of enterprises, it can be summed up primarily in the following five aspects.

(1) Economic accounting is carried out for all products of production. It is necessary to find out what products are above the profit-loss line, what products are below the profit-loss line and select those products that are above the profit-loss line for production. If it is necessary to produce a product that is below the proft-loss line because of the needs of the state and the people's livelihood, then it is necessary to improve production design and technology with self-awareness in order to do everything possible to lower production costs, decrease capital use, decrease losses to the greatest extent possible and to assure that the total profit level does not fall.

(2) Economic accounting should be carried out for each stage of production in the entire production process, including research on and design of the product, manufacture, sales and even use. The following situation often occurs: There is a profit for the products as a whole, but there is a fairly large amount of waste in a certain stage of production. For example, the manufacture of special-purpose equipment and standard tools one the one hand raises labor efficiency but also consumes manpower, material resources and financial resources with the result that the level of the cost of the product is affected. This situation should be subjected to economic accounting with attention being given to the ratio between what is expended and what is gained.

(3) The use of various forms of funds during the course of production should be subjected to economic accounting. There is a close relationship between use of funds and economic effects. Under ordinary conditions, there is an inverse ratio between use of capital and costs while there is a direct ratio between the former and profit. In enterprises with a high degree of technical equipment, the amount of funds used is great, costs are low and profit is high. In enterprises with a low degree of technical equipment, the amount of funds used is low, costs are high and profit is low. Through the development of overall economic accounting, the various types of use funds can be reduced to a rational degree so that it will be possible to decrease the amount of funds used without increasing costs. As the result the fund profit margin is increased.

(4) Economic accounting should be carried out not only for simple reproduction but should also be carried out for expanded reproduction. Practice tells us that the magnitude of the economic effectiveness of an enterprise is determined by whether administration and management during the course of simple reproduction is good or bad. It is also determined before construction of a plant by such factors as selection of plant site, engineering design, speed of construction, quality of installation, product direction and scale of production. In the past, by economic accounting was meant only economic accounting during the course of simple reproduction, while economic accounting during the course of expanded reproduction was neglected. As the result, losses often began on the day the newly established enterprise started work and went into production.

(5) All of the workers and staff of an enterprise should participate in economic accounting. Under the present conditions of modernized large-scale production, production expenditures become more dispersed and more complicated as the division of labor and cooperation within the enterprise become more and more finely divided. Thus, it does not do for accounting to be in the hands of a small number of specialists. Economic accounting must be carried out by all of the workers and staff joining with the specific workers and staff involved.

In so-called overall economic accounting, accounting at the least should be carried out on the basis of the foregoing five aspects. At present, the economic accounting that is being carried out by the majority of enterprises is not comprehensive. It should gradually be made comprehensive on the basis of the actual conditions in a given enterprise. Those way of thinking that repudiate the effectiveness of economic accounting are even more incorrect. In the management of an enterprise, overall economic accounting exerts important functions. These are manifested as follows.

First, an optimum plan should be selected through overall economic accounting. In all technical and economic activities of an enterprise, including such work as product design, organization of technology, factory building construction, pruchase of equipment and recrutiment of labor, auditing, budgeting and determination of policy should be carried out in advance. If policy is to be set correctly, various plans should be subjected to economic accounting, their advantages and disadvantages weighed and the best plan selected. For example, the cost of a product is for the most part determined in the design stage. Thus, repeated comparisons must be made of various design from the standpoints of technical effectiveness and economic effectiveness so that the relationships between performance and costs can be handled correctly. Because there is a direct ratio between benefits and performance and an inverse ratio between the former and costs, as performance increases, costs decrease and the benefits obtained increase. Therefore, under conditions in which product performance is assured, everything possible should be done to simplify product structure and spare parts structure, with precision processing not being used when coarse processing can be used and without using top-quality high-priced materials when low-quality cheap materials can be used. It is only in this way there can be assurance of obtaining higher economic effectiveness at the lowest cost.

Second, formation of costs should be controlled through overall economic accounting. At present, the costs of many enterprises are not formed under strong control but rather are formed at random as the result of the effects of various factors. Therefore, costs are very unstable, being high at one time and low the next. In order to change a situation of this type, it is necessary to control product cost by means of overall economic accounting. Overall economic accounting can generally be divided into four procedures: planning quotas; supervision and management;

accounting analysis; improving procedures. In regard to costs, a planning quota that will give the lowest costs is determined first and is then broken down into smaller quotas that are put into effect in departments, workrooms and unit groups. Following that, supervision and management are carried out during the course of formation of costs, with expenses being paid according to the plan, with materials being distributed in accordance with the quota and with production being organized in accordance with the production quota. Next, economic accounting is carried out in regard to the state of completion of quotas in each stage of the entire process. This also involves control of information feedback of instructions. Constrastive analysis is also carried out of what has actually been completed and of the planned quota in order to find any errors that have occurred and their causes. Finally, procedures are determined for correcting the errors. In this way, various types of consumption can be controlled within the scope of the planned costs. These four procedures of overall economic accounting correspond to the PDCA (abbreviations of the four English words, planning, deployment, checking and application) in TQC (T,Q,C being the first letters of the English words Total, Quality and Control, with the letters TQC together standing for Total Quality Control). At each cycle, errors are corrected once so that actual costs can be kept close to planned costs. For example, repeating of the cycle can result in control of the entire process of formation of product costs.

Third, by means of overall economic accounting, an enterprise can be stimulated to integrate rights, responsibilities and benefits and to improve administration and management. Socialist enterprises are enterprises that are independently run on the basis of the system of public ownership of the means of production. The state gives the enterprise certain economic rights in regard to production, supply, sales, personnel, finances and materials. The enterprise assumes such economic responsibilities as completing the production mission assigned by the state on time and handing over a certain proportion of taxes and profits. At the same time, it correspondingly also obtains certain economic benefits. These three aspects are closely related to each other. Overall economic accounting stimulates an enterprise to integrate its economic rights with its economic responsibilities and economic effectiveness with economic benefits by bringing into play the effects of the inherent motive power of economic benefits. The issuing of economic accounting quotas is the implementation of economic responsibilities and the accounting when a quota has been completed is an examination of the state of fulfillment of economic responsibilities. Whether a quota has been completed well or badly indicates whether economic responsibilities have been fulfilled well or badly. This determines how much economic benefit is obtained, with severe unemployment is a punishment that is received economically and legally. Therefore, carrying out overall economic accounting can impel an enterprise to study scientific management methods, to improve its administration and management and to increase its economic effectiveness. If this is not done, it is very difficult for the enterprise to be managed well.

It can be seen that overall economic accounting must be carried out. We must become fully aware of the important functions of overall economic accounting and conscientiously put it into effect. In addition to solving this problem of awareness, we must also expend a great deal of effort, make some "clumsy" efforts and carry out basic management work in a strong but crude way in order to create the essential conditions for doing a good job of overall economic accounting.

10019
CSO: 4006

FOREIGN TRADE

SUGGESTIONS MADE FOR INCREASING FUJIAN'S FOREIGN TRADE

Beijing GUOJI MAOYI WENTI [INTERNATIONAL TRADE JOURNAL] in Chinese No 3, Sep 80 pp 1-6

[Article from Fujian Provincial Foreign Trade Bureau: "Development of Our Province's Understanding and Conceptions About Foreign Trade Matters"]

[Text] Fujian Province, located on China's southeastern seacoast, has a long history of foreign trade. Under the leadership of the programs and policies of the Party Central Committee during the past 30 years, Fujian Province has made definite progress in foreign trade matters, and progress has been by leaps and bounds particularly during the 3 years since the smashing of the "gang of four." In 1979, Fujian Province entered into trade relations with 120 countries and regions of the world. Export figures increased 1.2 fold over 1976 for an average annual increase of 30.1 percent. In looking back over the development of Fujian Province's foreign trade during the past several years, we feel that most important has been the existence of correct policies that have placed exports at their center, singlemindedly emphasizing production to expand the supply of goods for export; and singlemindedly giving attention to marketing to open up foreign markets.

Correct policies have been a major premise underlying the development of foreign trade. During the period of the Great Cultural Revolution, the unstinting promotion by Lin Biao and the "gang of four" of "locking up the country" and vilification of the development of foreign trade as "national betrayal," and as a "slavish philosophy toward all things foreign" negated the position in the national economy and the role that foreign trade should have occupied, confounded people's ideas, and resulted in the stagnation or retrogression of our province's foreign trade. Following the smashing of the "gang of four," and particularly ever since the Third Plenary Session of the 11th Party Central Committee and the Second Session of the Fifth National People's Congress, the Party Central Committee and the State Council have given extreme emphasis to foreign trade, formulating programs for the development of foreign trade, making the active growth of foreign trade, and the development of foreign economic cooperation and technological exchange a firm and unswerving major policy during China's 3-year period of economic readjustment, and for a long time to come, with the result that China has entered a new phase of development of foreign trade. The Party Central Committee and the State Council have also decided to take advantage of the close proximity to our province of Hong Kong and Macao, and of the large numbers of Overseas Chinese, implementing special policies and flexible methods for Fujian Province's foreign economic activities, and allowing Fujian Province increased room for maneuver in the use of Overseas Chinese capital, foreign capital, the development of foreign trade, the increase in foreign exchange income, and in accelerating the development of the regional economy so as to make a great contribution to the four modernizations of China. This is the Party Central Committee's earnest expectations of Fujian Province, and it is also an encouragement and a goad to the broad masses of foreign trade employees in Fujian Province.

On the basis of the major decision of the Party Central Committee, the Fujian Provincial CCP Committee acted in light of the realities in Fujian Province, proposing a policy for "breakthrough at the center (light industry and foreign trade), and arming of both ends (heavy industry and agriculture)" to give active play to the leverage role of trade in development of the national economy to serve in accelerating the pace of our province's economic construction. This policy of the party greatly aroused the initiative of all quarters in undertaking foreign trade. For the past year or more, all echelons of the CCP Committee have placed foreign trade on their important agenda and have broadly and profoundly undertaken a mental arousal to further strengthen leadership of foreign trade work. All areas and all units have very high enthusiasm for the development of production of export products, and have striven greatly to open avenues and to widen the supply of export goods, even to the extent that some units that heretofore have had little contact with foreign trade activities such as scientific research, culture and education, hygiene, the Women's Federation, politics and law, and labor units have now gone into action to develop foreign trade undertakings, to increase foreign exchange earnings, and to hasten "four modernization" construction. A situation of party-wide mobilization with everybody acting to engage in foreign trade is in the process of formation.

The key to the development of foreign trade lies in increased exports, and the expansion of exports requires, in turn, that a good job of production be done to place exports on a solid material foundation. This is experience validated by many years of practice. Ever since 1979, every echelon of foreign trade units in Fujian Province has diligently adhered to the important decision of the Third Plenary Session of the 11th Party Central Committee relating to the shift of work emphasis to socialist modernized construction, putting their chief energies into doing a good job in foreign trade endeavors, giving singleminded emphasis to supplies of goods, and to sales promotion. In the organization of supplies of goods, we have been rather attentive to acting in a practical way and in adapting methods to local circumstances to coordinate with the units concerned on the basis of our province's natural resources and production conditions to actively develop export items that are suitable for our province, that have rich regional characteristics, and that are suitable for sale in foreign markets. In practical terms, main emphasis has been given the following.

First, bearing in mind support for agricultural production and the development of diversification in rural villages, and through needed economic techniques (such as the methods of coupling tea and grain and tea and fertilizer) for the support of [illegible] of canned raw materials such as tea, rosin, and mushrooms, we have not only promoted the development of large quantities of economic crops and sideline products from rural villages and increased the income of communes, brigades, and commune members, but we have also increased the supply of goods for export. In the case of mushrooms alone, an annual increase to income to communes, brigades and commune members of more than 40 million yuan has been realized, making mushrooms the greatest sideline occupation earner in the rural villages of Fujian Province.

Second, by capitalizing on the scarcity of land and the large population in the coastal regions of Fujian Province and the existence of a certain amount of light industry and handicraft industries, and following the principle of local procurement of materials, we have assisted development of importation of materials for processing, using imports to nurture exports and to organize development of special handicraft exports such as plastic slippers, protective gloves, cloth shoes, drawnwork, woven bamboo and straw manufactures, and regional goods requiring investment of little capital and on which there is a quick return with a requirement for intensive labor. These have both increased foreign exchange from imports and have supported the development of commune and brigade enterprises, solving the problem of a livelihood for persons awaiting employment.

Third, while striving to expand the export of agricultural sideline native crafts and light industry and handicraft products, active efforts were made to unearth potential for hidden resources in mountain areas. Through production capital and support in equipment and tools, help was given to places or to communes and brigades for collective increases in the export of mine products such as wolframite and granite tailings. Furthermore, insofar as existing production technology permitted, export of pharmaceuticals, machinery and electrical goods gradually increased. The proportion of state purchases for foreign trade of industrial and mining products from Fujian Province rose from 5.4 percent in 1976 to 8.2 percent in 1979.

Fourth, when both domestic and foreign markets require commodities the sources of which are limited, while adhering to the principle of "unified planning that takes all factors into consideration and making proper arrangements," a portion should be squeezed out for export through development of production. Foreign trade departments should support the development of live and rare varieties where there is no great conflict with internal sales and the export of which brings high foreign exchange returns. Examples are aquatic and oceanic products where foreign trade departments should emphasize assistance to communes and brigades in fishing areas in organizing the catching of grouper, swimming crabs, and eel fry, and the hatching of eels so that during the next several years, without any increase in the export of staple economic fish, Fujian Province will earn greater foreign exchange while exporting less. A comparison of 1979 with 1976 shows that Fujian Province's export of aquatic and oceanic products increased only 29 percent in volume, while foreign exchange earned from exports increased almost threefold. Of the total, export of yellow croakers, hairtails, and butterfish, these staple economic fish, increased by less than 10 percent. The increase consisted mostly of miscellaneous freshwater fish, rare fish, and some mollusks. The foreign exchange earned increased more than threefold over 1976.

As a result of the disturbance and destruction caused by the ultraleftist line of Lin Biao and the "gang of four," export of commodity production waned. The supply of goods was erratic, and traditional agricultural sideline native products, in particular, declined dramatically. All import and export companies concerned with foreign trade had no choice but to devote great energy to the organization of sources of supply of goods. At the time, a kind of "so long as there are goods available, don't worry about selling them" mentality existed, and foreign marketing work consequently received insufficient attention. In recent years, as industrial and agricultural production has gradually moved along the track of healthy development, foreign trade units have shifted their main energies to doing a good job of foreign trade, and every import and export company has begun to emphasize foreign sales work.

First of all, the thrust of trade has been founded on the characteristics of goods Fujian Province has to offer and on marketing plans and arrangements, and in addition to giving attention to the consolidation and strengthening of the supply of goods and exports to traditional markets in Hong Kong, Macao, Singapore, Malaysia, and Japan, marketing work in Europe and North America has also been strengthened. The export (supply) figures for Hong Kong, Macao, Singapore, Malaysia, and Japan for 1979 showed a 1.25 fold increase over 1976, and the proportion of annual exports they occupied was consistent with a slight rise. In 1979, export figures for exports to Western Europe and North America increased 1.5 fold over 1976.

Secondly, as regards marketing channels, a beginning was made in marketing through many channels, i.e., we would do business with anyone who wanted our merchandise. In an effort to gradually move toward the establishment of a relatively stable sales network, attention was given in principal marketing areas to finding customers with good credit, business ability and a branch and sub-branch organization who were enthusiastic about handling our goods and who could act as agents for certain of our export goods. Currently agents in Southeast Asia and Western Europe have played a definite role in expanding sales of canned goods and tea, the staple exports of Fujian Province.

Furthermore, the method of trade and the style of operations have also changed from the conservative and passive style of the past of "sitting in the shop awaiting customers" and "living a life of seclusion at home" to inviting customers to our doors and going out to do business. We have developed from simple ways of doing things to relatively flexible trade. In the past, Fujian Province's export trade could only be conducted from within China. Export transactions depended mostly on the twice yearly Guangzhou Export Commodities Trade Fair, and for many years foreign marketing professionals could not be sent abroad nor were foreign traders allowed to come to Fujian. There was a great deal of blindness in operations. In recent years, changes have begun to occur in this state of affairs. During 1979, various import-export companies in Fujian Province sent several score personnel abroad to 23 countries and regions to engage in trade studies and sales promotion activities. The numbers of people going abroad totaled more than had done so during the more than 30 years since Liberation. Additionally, customers from more than 20 countries and regions were invited to visit Fujian to have a look around and to discuss trade matters. This spurred domestic production and enlarged the impact of our export goods abroad. Once customers made on-site inspections of some commodities and understood matters, their confidence in doing business was enhanced and they placed large orders with us or agreed to become sales agents on commission. Importation of materials for processing, importation of parts for assembly, medium and small scale compensation trade, and sale of goods on commission also gradually grew. Additionally, more attention was given the variety of designs, sizes, and colors of export goods, to the standardization of models, and to packaging and decoration in conformance with the character of foreign markets. Ordering of production on the basis of sales in a teaming of production and sales was also done in a gradual change from the former practice to looking at the international terms through the eyes of the domestic market and the old practice of selling whatever happened to be produced. This enhanced the planning and suitability of merchandising.

Even though we have made some efforts in the organization of the sources of goods for export and in sales promotion work, which has been rewarded with some initial success, nevertheless in an overall sense, the level of Fujian Province's foreign trade is still low. Despite increased exports, the amount is still slight. Though some goods enjoy a reputation in foreign markets, quantities are not great and the goods have not yet become "impact" goods. Our foreign sales force is weak; our understanding of foreign trade matters inadequate; the number of our personnel who understand foreign trade affairs insufficient; and business is not conducted with vigor and proficiency. This does not meet requirements for the rapid development of the economy of Fujian Province or of foreign trade.

In the implementation of the applicable instructions of the Party Central Committee and the State Council on economic activity in Fujian, and in the implementation of the Provincial CCP Committee's proposed "breakthrough at the center and the arming of both ends" for a quickening of the pace of Fujian Province's economic construction, foreign trade units have been assigned a glorious yet arduous task. By way of making better use of foreign trade units in the development of domestic and foreign economic interchange, in promoting industrial and agricultural production, in enlivening the domestic markets, and in accumulating capital for national construction, we offer some ideas for a period in the future on how to increase Fujian Province's foreign trade.

(1) Make full use of foreign market conditions and quicken the pace of development of foreign trade.

China is a socialist country with a population of more than 900 million, in which economic construction can rely only on our own strength. At the same time, however, we must make full use of favorable external conditions and positive factors. In order to make fullest use of the leverage of foreign trade in the national economy and hasten economic construction in Fujian Province to assure the foreign exchange needed for the introduction of technical equipment and the importation of important materials, a great growth in the foreign trade of our province must take place. On the basis of the needs of and possibilities for the development of the national economy, we imagine that in any future year the speed of increase in Fujian's foreign exports will be maintained overall at a somewhat higher rate than the rate of increase in industrial and agricultural production throughout the province. On the basis of Fujian Province's many years of development of foreign trade, particularly the average rate of increase during the 1970's, an annual rate of increase of 20 percent is attainable.

(2) Make fullest use of Fujian Province's favorable conditions; vigorously develop production of export commodities, and gradually change the composition of exports.

Fujian Province is located in the semi-tropics with its face to the sea and mountains at its back. The climate is mild, rains copious, and its ocean broad. Its forestry, mining, and aquatic product resources are quite abundant. It has a definite industrial and agricultural base and many of its products enjoy a reputation in international markets. Additionally, the Central Committee has instituted special policies and flexible methods for the economic activities of Fujian Province, which permit the attraction of Overseas Chinese capital and foreign capital, and the introduction of technology to develop production of commodities for export. It may be said, therefore, that superior conditions exist for the realization of great growth in foreign trade, and that prospects are great.

A look at the current composition of export commodities from Fujian shows that agricultural sideline products and light industrial and handicraft goods account for the bulk. Though there has been an increase in recent years in industrial and mining products, they still constitute only a small proportion of the total, only 8 percent, and most of these are raw materials. A look at the actual merchandise exported shows more than 300 items of which those earning more than 10 million dollars annually [illegible] are only canned goods, teas, plastic slippers, rosin, and rice. These five items account for 42 percent of the total value of goods exported from Fujian. [illegible] relatively speaking, may be considered to be the staple export items for Fujian Province. But in terms of both national trade and world trade, they are scarcely worth mentioning.

In order to develop Fujian Province's foreign trade with all possible speed, during the next [illegible] we will have to proceed from our current foundation, adhere to [illegible] investment plans, vigorously open up unused potential, innovate, fill in [illegible], and increase current export commodities, strive to increase [illegible], and closely link the absorption of foreign capital and the introduction of technology to the development of light industry, the chemical industry and [illegible]. We will have to closely connect the development of diversified businesses in rural villages, the readjustment of the economic structure of agriculture and increases in commodities from commune and brigade enterprises to the expansion of exports. Special attention will have to be given fullest use of Fujian Province's favorable conditions and the most made of its special advantages to make gradual changes in the composition of export commodities, and to strive to carve out a [illegible] of its own.

First, there has to be planned exploitation of the province's abundant products and underground ore resources, and vigorous development of industrial and mining products, particularly the export of major industrial chemicals. While maintaining an overall balance among resources, investments, and fuel energy, adapting methods to local circumstances, and making rational overall arrangements, emphasis should be placed on the development of ferrous and non-ferrous ore products (such as wolfram, molybdenum, graphite, and fluorspar), the development of building materials (such as cement, granite, fresh water river gravel, etc.), increases in forestry products and [illegible] industrial chemicals (such as rosin, plywood, caustic soda, and [illegible]), and certain machinery and electric products. Furthermore, there should be a gradual change away from some raw material items toward the export of manufactures.

Second, actively develop light industry products for export. The emphasis should be on two aspects. One is a strengthening of scientific research for light industrial items with the emphasis on the introduction of advanced technologies for improvements in the quality and technological levels of products, advances in styles and models, increases in variety of designs, sizes, and colors, acceleration of the pace of upgrading and change in products in order to increase the suitability and competitiveness of products in the international market. The other aspect is positive development of new products, combining readjustments to the structure of the agricultural economy and the development of diverse business in rural villages to make complete use of sugarcane and timber, to increase the exports of canned goods, granulated sugar, paper, and lumber, as well as the industrial byproducts of the refining of sugar and the manufacture of paper. Additionally, there must be organized development of labor-intensive products to make use of the abundance of labor in coastal areas of the province where land is scarce and people numerous. Concurrent with fullest use of local resources should be further expansion of the import of materials for processing, using the imports to support exports to increase foreign exchange earnings. There should be emphasis on the development of drawn work, fishing net processing, and on certain special handicrafts.

Third is further consolidation and development of the export of agricultural sideline native products. Fujian Province with its mild climate and suitability for agriculture in all four seasons possesses exceptionally advantageous conditions for the development of agricultural sideline products. Some traditional agricultural sideline products have been historically renowned both at home and abroad. Under existing conditions of production, for some time in the future agricultural native handicraft items will continue to be the major export commodities from Fujian Province. We figure on a future expansion of the export of tea (principally oolong) with active development of mushrooms, dried bamboo shoots, hand made paper, and such traditional agricultural sideline products. Additionally, advantage should be taken of the geographical proximity of Fujian Province to Hong Kong and Macao, and to Fujian having a large number of Overseas Chinese for the development of exports of fruits, vegetables, products of the sea and such fresh or live commodities as well as of certain "Overseas Chinese sale" commodities with a hometown flavor (such as preserved fruits, Chinese style sweets, and rice and wheat manufactures). Effort must be made to do a good job of operating production bases for agricultural sideline products with striving for superior quality, high output and balanced supplies.

(3) Intensification of investigation and research, bold entrance into the international market, doing a good job of sales promotion work abroad, and increase in the level of modernization of foreign trade work.

We must diligently study and master the laws governing the capitalist marketplace and acquire the skills to do business with them. We must study marketing tactics with the characteristics of the capitalist markets in mind, applying every custom, method, and means of sales promoting in international trade, make the most of the superiority of China's socialist system, give full play to the dynamic role in foreign business of every echelon of trade organizations, courageously enter the international market, take our export items into the international markets for examination, allow our foreign trade personnel to go to foreign markets to brave the storms and get their feet wet in order to learn how to triumph over competitors in the complex international economic struggles, and to do our business well, in large volume, and in a lively way, changing with all possible speed the weak situation currently existing in foreign marketing work.

First, there should be a determination of our marketing tactics, the preparation of an operational plan for commodities, and arrangements made for exports to every region of the world. This work should begin with the realities of commodities available for export from Fujian Province, and be founded on a penetrating investigation, study, and understanding of changes in supply and demand in foreign markets. On the basis of the existing thrust of Fujian Province's existing export trade together with future trends in commodities, we must, in our trade arrangements with individual countries and regions, consolidate and develop the supply of goods and exports for Hong Kong and Macao, Southeast Asia, and Japan, and we must especially make fullest use of Fujian Province's trade organization in Hong Kong to strengthen local sales in the Hong Kong area, and to consolidate and develop a dominant position for ourselves in supplying the Hong Kong and Macao area. We must also use the base of Hong Kong to do a good job in the entrepot trade to distant places across the seas. We must concurrently further enlarge our export trade with industrially advanced countries in Europe and the Americas, and actively develop exports to Africa, Oceania, and Latin America. We should make a start now to take stock of customers who currently do business in exports from Fujian Province, and use this stock taking as a basis for the selection of suitable people to act as agents for our exports, with special attention being given to full arousal of the positive element of customers, particularly Overseas Chinese merchants, so that their role in the promotion of our exports will be used to full advantage for the gradual establishment after several years of effort of a foreign sales promotion network with wide contacts, strong sales ability, and sensitivity to the market.

Second, we must strive to nurture and train a foreign trade corps that is strong in political ideology, professionally proficient, and has a good work style. Currently, Fujian Province's foreign trade cadre corps is at a low level in policy and professional terms. Cadres who can speak a foreign language are few, and the foreign sales force is weak, far from meeting the needs of the developing situation. During the past several years, as foreign trade has rapidly developed, we have increasingly felt the urgency of diligent solution to this problem. In the future, we must act to train foreign trade experts in two ways. One is to take the initiative in having Xiamen University run specialized courses in foreign trade while at the same time making efforts of our own to operate technical secondary schools for foreign trade, with constant improvements in the quality of education for the planned training of foreign trade experts with both a mastery of international trade knowledge and an understanding of foreign languages. The other way is to give earnest attention to the on-the-job training and rotational assignment of cadres, planning to run short training classes in close combination with the development of actual professional needs, rotational training of mainstay leadership cadres at every echelon of foreign trade units, and the training of all kinds of professional cadres. Sufficient attention should be given to after hours study by working cadres with the running of professional lecture courses, participation in television broadcast universities, and the organization of after hours study groups for the study of politics, vocational work, foreign languages, and administration and management to improve foreign trade policy and vocational levels. There must be further strengthening and fuller use made of personnel in the front lines of work in foreign sales with planned organization of trips abroad for them to observe foreign trade and promote sales, and for participation in international product exhibition and sales meetings and such activities. Foreign trade personnel should be put into the international market for tempering and for the growth of their abilities through practice.

Third is the hastening of harbor construction with improvements in loading and unloading conditions at piers so as to be able to do a good job in foreign trade transportation work. Presently, Fuzhou and Xiamen are the two ports in Fujian Province that carry foreign exports. Their piers are in poor condition; loading and unloading facilities are antiquated; and they are unable to meet the needs of increasing development of foreign trade. Modernization of the harbors and piers, and strengthening of the foreign trade transportation corps is a necessary condition for the expansion of foreign trade. Given the serious attention of the Provincial CCP Committee and the authorities concerned, a modernization project is being intensively carried out now at Mawei Harbor in Fuzhou and in Dongdu Harbor in Xiamen. Under present conditions, we need both to make full use of the cargo handling capabilities for imports and exports at Fuzhou and Xiamen, and to gradually improve unloading and loading facilities at the piers, improve the levels of mechanization, and promote, with all possible speed, palletized transportation with gradual development toward containerized transport. At the same time it is necessary to make active use of Fujian Province's numerous natural harbors and bays and the favorable circumstances of their proximity to Hong Kong and Macao for the gradual launching in coastal areas of dispatch points supplying export goods to the Hong Kong and Macao area, with shipments from numerous points being organized into an organically linked foreign shipping network of large and small ports in which Fuzhou and Xiamen are at the center. With regard to foreign trade transportation, the number of voyages of freighters now traveling from Fujian to Hong Kong should be increased and, depending on actual needs, consideration should be given increase of scheduled freighters to Singapore, Malaysia, and Japan.

(4) Actively but prudently work at test sites for the reform of foreign trade management systems for the gradual establishment of a highly efficient foreign trade management system.

In the spirit of a series of directives from the Party Central Committee and the State Council on reforms to the foreign trade management system, our province has already begun to institute reforms in the foreign trade system under the direct leadership of the Provincial CCP Committee and the People's Government.

(1) In the spirit of action with prudence, steady progress, centralization of that which should be centralized, dispersal of that which should be dispersed, control without stifling, and relaxation without chaos, and beginning with whatever is helpful to the widespread arousal of the enthusiasm of all quarters for the development of foreign trade, permit each region, each unit, and each enterprise greater opportunities to participate in some foreign trade activities to promote a coming together of production and marketing, and to give impetus to the development of production of commodities for export. It should be stipulated that under the principle of adherence to unified policies, unified planning, unified prices, and unified action abroad, all qualified responsible bureaus at the provincial level should test

operate specialized companies (or import-export companies) that combine industry and trade or agriculture and trade; those areas possessed of ports open for foreign trade should be able to set up port authorities to handle export duties within the scope of their authority. As each becomes capable, it should be given permission. Units not directly involved in export duties should, when they have some commodity or new goods to supply for export, be able to take the initiative for arranging export with the import-export companies or port authority on the basis of the principle of echelon by echelon management of commodities, after having secured the agreement of authorities in charge. Should the port companies or authorities refuse to accept such items, the units should be able to apply for permits from the Provincial Foreign Trade Bureau to make contact abroad for itself.

(2) In the division of labor in the commodity export business, echelon by echelon management and echelon by echelon administration should be instituted on the basis of both that which helps play a positive role in the organization of commodities for export and that which helps the spirit of competition in the international market, while adhering to the principle of the "four unifications." Management responsibilities of provincial foreign trade export-import branch companies, and for combined industry and trade or combined agriculture and trade special export companies: Commodities having to do with the state plan or the people's livelihood that are uniformly rationed goods or limited in quantities for export; staples in the export trade that meet fierce competition in international markets, and strongly monopolistic commodities; and key commodities for which materials were imported for processing. All others to be placed under the management of seacoast port authorities. Commodities for which management responsibility is overlapping to be coordinated and balanced by provincial branch companies through pricing and marketing arrangements. According to current export commodity statistics for Fujian Province, the money derived from provincial branch company and special export company operations amounts to more than 7 percent. We feel that this way of doing things is positively reliable, is both controlled and liberalized, and that no temporary disjointedness that impairs exports can occur as a result of these procedures.

In the handling of foreign processing and assembling work and in medium and small scale compensatory trade, a delegation of jurisdiction is also appropriate with the stipulation that each area and each unit possesses authority to negotiate and sign contracts externally for the importation of materials for processing, and also with the clear stipulation that for some commodities materials may not be accepted for processing in order to avoid impairment to our traditional markets or displacement of our exports. In cases in which medium or small scale compensatory trade may impair our normal exports, the required limits and the limitations on authority requiring approval should also be stipulated.

In the division of foreign exchange from trade, individual policies for rewards and punishments should be adopted that properly concentrate and care for the enthusiasm of those regions, units, and enterprises that created the foreign exchange in accordance with pertinent national regulations and the actual conditions prevailing in the province. Apart from providing for a proportional division of commodities in general, in the case of anything suited for sale abroad for which there is a shortage in supply, or in the case of agricultural sideline native products that fetch a high rate of return in foreign exchange, there should be preferential proportional division of foreign exchange as encouragement. Export commodities that have incurred high losses merit no division of foreign exchange in order to limit their export.

Reform of the system of foreign trade is intimately related to the entire national economic system. If this task is done well and a highly efficient foreign trade management system is established to meet the circumstances of China, we will still lack experience, and we must, in the course of practice, constantly summarize, enrich, improve, and thereby become more perfect day by day.

9432
CSO: 4006

FOREIGN TRADE

PROS, CONS OF COMPENSATORY TRADE DISCUSSED

Beijing GUOJI MAOYI WENTI [INTERNATIONAL TRADE JOURNAL] in Chinese No 3, Sep 80 pp 37-38

[Article by Chen Xuecheng [7115 1331 2052]: "Tentative Discussion of the Pros and Cons of Compensatory Trade"]

[Text] Despite a not very long history of development, compensatory trade has become a rather pervasive trade form in international trade because of its not inconsiderable advantages for both buyers and sellers.

The advantages of compensatory trade for the buyer are the following:

(1) It can cut down on the use of ready cash to import machinery, equipment, and other needed products, permitting introduction of advanced technology, increased production capabilities, and the development of the economy;

(2) It allows use of foreign marketing channels, thereby guaranteeing quantity marketing of one's own products;

(3) Through indirect product repayment, imports may be used to sustain exports, opening up marketing avenues that combine sales promotion plans, comingling of items for which sales are slack, and expanding the effects;

(4) Resale of goods demands maintenance of quality, maintenance of quantity, and delivery of goods on time. This impels the buyer to master as quickly as possible advanced production techniques, to strengthen management and administration of enterprises, thereby giving impetus to the development of production.

Compensatory trade methods are also somewhat attractive for buyers because:

(1) Even when buyers are short of ready cash, sellers can arrive at a way of doing business with them, with the seller not only not losing a customer but guaranteeing repayment for the goods;

(2) Sellers may accordingly transfer semi-finished goods or finished goods to other countries for production, thereby reducing production costs. This advantage is particularly apparent in the case of products for which production requires high labor intensity. This results from the high cost of labor in occidental countries.

(3) Resales of goods may approximate sales, thereby reducing transportation expenses and increasing profit rates;

(4) Movement abroad of products for manufacture can reduce domestic environmental pollution and lower pollution control expenses.

Nevertheless, compensatory trade is no bed of roses for either buyers or sellers. Because trade conditions are complex, conflicts and disputes between the two parties are very sharp. For example:

(1) The buyer hopes to introduce the most advanced machinery, equipment, and technology, but the seller, in order to maintain his advantageous competitive position, frequently does not desire to turn over to him the most advanced things;

(2) In the selection of currencies, each calculates his personal benefit. The buyer hopes to use soft currency, while the seller wants to use hard currency;

(3) In the use of indirect goods repayment, the buyer desires, insofar as possible, to use goods with slack sales in repayment in order to expand exports, while the seller tries to get hold of goods that have a ready market so that he will be able to dispose of them easily.

(4) The buy back quantity of direct products is also a topic on which both sides stick to their guns. The buyer hopes that the greater the proportion of buy back goods in the total quantity of direct goods the better, while the seller's position is that it would be ideal if all of the goods could be sold locally.

Even though compensatory trade differs from the usual simple in and out transactions, it has the following special characteristics in practice:

(1) In addition to the claims for damages clauses that are usual in trade, compensatory trade also provides for special indemnity clauses. Should the seller be unable to load and transport machinery, equipment or other commodities on time, he must pay to the buyer a from 10 to 15 percent ad valorem indemnity on the total. On the other hand, should the buyer be unable to provide, at a fixed price and on time, compensatory goods of proper quality or quantity, the seller has the right to automatically be relieved of the obligation to buy compensatory goods, thereby turning the original import-export combined compensatory trade into a transaction in which the buyer unilaterally imports machinery, equipment, or other needed goods. Consequently, for the buyer, guaranteed resale of direct product output, the strengthening of administration and management, strict observance of operating procedures, and continuous improvement in technical levels with strict attention to quality controls is an extremely serious business.

(2) During the course of negotiations about the transaction, usually the price of equipment or other goods offered for sale by the seller is the price in the international market at the time, but compensatory direct products can be provided only after the imported equipment has been installed and placed in production, which is frequently several years later; therefore, it is not easy to set a price for it at the time of negotiations. Owing to countless changes in the market and new advances in technology that regularly occur, escalation and replacement of products

is common. Goods that sold well may become goods that sell poorly, and prices constantly change too. Consequently, at the time of negotiations, a price must be set for most products, but this is frequently a sore point.

(3) In the case of direct goods for resale or buy back, there must be clearly defined quality standards and proportions for resale and buy back, so as to avoid subsequent disputes that would make smooth implementation of agreements impossible.

(4) At the present time, in order to protect the products of its own industries, every country adopts a welter of policies that reward exports and limit imports, whereby imports of goods from other countries are faced with more and more quotas. Though quotas have not been set on some items, they are classified as "basket items" for which a specific quantity is set. When that quantity is reached, a quota is unilaterally imposed. In view of this kind of situation, when compensatory trade is under discussion, the buyer must reach some agreement with the seller about the areas in which sales of compensatory goods are to be made, so that the seller will not take up the quota with goods, thereby impairing the market for his own products. Inasmuch as the price of compensatory goods is generally lower than the price of non-compensatory export items, this results in unintentional reduction in foreign exchange earnings. In order to avoid this drawback, as far as the buyer is concerned it is best to select compensatory goods for which there are no quotas or, if there are quotas on the goods, to select items in demand that the buyer cannot alone fulfill

China is a country with abundant labor resources, a vast territory, and a vast array of goods wherein superior conditions exist for the launching of compensatory trade. But when China began to undertake this kind of trade a scant 2 years ago, there was a feeling of insufficient knowledge, both theoretical and practical. This required that we conscientiously summarize both negative and positive experiences and study actual cases abroad so as to be able to learn how to avoid harm and reap benefits.

During the past 2 years, in the process of launching compensatory trade at Shanghai ports, some problems cropped up that I know about. Here are only two examples.

Some units failed to make the necessary investigation and study of a customer's credit position, fell for the customer's sweet talk, and signed a goldfish compensatory trade agreement with him and set about at once to build fish tanks. The other party was a petty functionary with no real standing, so not a cent of funds was paid and the agreement became a dead letter.

In one case involving a combination of compensatory trade and processing, the agreement stipulated that any products of identical specifications that we might manufacture could not be marketed in the jurisdiction of the other party. As a result, the customer got all the benefits and we were forced to withdraw from the market. In reality, the kind of product involved was an extremely common one, which we were quite capable of producing and marketing ourselves and for which there was no necessity that we sign an agreement that bound us hand and foot. In the process of executing this transaction, the imported raw materials for the first batch of goods was supplied for the customer by us in an interim arrangement, but as of the time we delivered the goods, the raw materials and equipment promised by the other party had not yet arrived.

In order to do a better job in compensatory trade, the writer feels that the following points merit attention.

When entering into compensatory trade, as with trade of any kind, knowledge of the customer's credit is necessary. There can be no rushing into precipitate action or falling for the exaggerations of some customers.

The goal of socialist production is to increase the standard of living of the people and to satisfy the constantly growing needs of the broad masses of the people. Granted that the production of final products is very important, nevertheless the production of intermediate products cannot be overlooked. Compensatory trade should not be used purely for the introduction of machinery and equipment to produce common consumption goods, rather effort should be placed on the development of facilities of a scientific and technical nature, as for example the production of electronic equipment, or the production of prospecting and smelting equipment. Progress in this realm seems to be currently very small.

The main reason occidental countries want to accept compensatory trade is to promote the sale of their excess production and to replace their equipment so as to be able to maintain their competitive dominance. They are not really able to provide the most advanced and most up to date machinery and equipment. Nevertheless, we should intensify investigation and study to plomb the various circumstances of products concerned, and work at introduction of the advanced equipment that suits our country's needs.

9432
CSO: 4006

TRANSPORTATION

TECHNOLOGICAL REFORM OF HIGHWAYS URGED

Beijing GONGLU [HIGHWAYS] in Chinese No 3, 25 Mar 80 pp 2-5

[Article by the Highway Bureau of the Ministry of Communications: "Hasten Reform of Highway Technology; Adapt to the Needs of Construction for the Four Modernizations"]

[Text] Technological reform of existing highways and continual increase of their capability to handle travel are important constituent parts of digging for potential, renovation and reformation of highway transportation. They are forceful measures to change the backwardness of highways to adapt to the needs of construction for the four modernizations. Over the past decade or so, as highway transportation and production developed, and as the traffic departments of each locality actively constructed new highways and as existing highways are continuously being improved, over a dozen thousand kilometers of roads have been improved and covered with asphalt and over two million meters of bridges have been rebuilt, travelling has been facilitated, the efficiency of transportation has been increased, great achievements have been realized, and a lot of experience has been accumulated. Analysis of the information of each locality shows that after roads have been improved and have been covered by asphalt, the production of automobile tonnage increased by about 30 percent, travelling speed increased by 30 to 50 percent, the mileage between major road building projects extended by about 30 percent, mileage travelled on wheels extended about 40 percent, fuel consumption dropped 15 to 20 percent. Transportation costs dropped 15 to 40 percent, and highway maintenance costs could also be greatly reduced compared to that for the original sandy and rocky road surfaces. It can thus be seen that the economic results of rebuilding original highways are very visible.

But, for many reasons, our strides in highway rebuilding have not been large enough. Up to today, still about 50 percent of highways are not up to the standards of highway technology. Twenty-seven percent of the roads are still unpaved dirt roads. There are over 700 places where bridges are needed. There are over 100,000 meters of dangerous bridge crossings that urgently require rebuilding. In particular, the points of entry into and departure from some large and medium sized cities and major highways that lead to important ports, railway centers and industrial and mining bases already have several times the amount of traffic over the original design capacities. There are many cars but the roads are narrow, with the addition of mixed traffic, traffic jams frequently occur, and the number of traffic incidents increases day after day. This situation not only affects the flow of transportation by railroad and by water but also creates many unnecessary difficulties for industrial and agricultural production and the people's livelihood. This is also unfavorable to the development of war preparedness and tourism. Therefore, hastening the technological reform of highways to adapt to the needs of the four modernizations is an important task of our highway and communications departments during the coming period and it must be grasped tightly and well.

1. The Principles of the Policy for Technological Reform of Highways and the Demands of the Task

In his report to the Fifth People's Congress Chairman Hua called upon the people to "exert efforts in rebuilding the existing highways while actively building new highways." This signifies that our nation's highway construction has entered into a new stage of popularization and improvement. The key in improvement is the main highways, especially entry and exit points to and from large and medium sized cities. The key project in popularization is the building of county and commune roads in mountain regions, border defense roads and unconnected roads and connecting roads.

To hasten the rebuilding of existing highways, ideology must be liberated, truth must be sought from facts, science must be respected, practical results must be gained, foreign nations' advanced experiences must be learned from the point of view of our nation's particular situation and the characteristics of highway communication, the policy of relying on the masses, relying on the localities, combining war time and peace time efforts, joining together popularization and improvement of roads together, and the principles of suiting measures to local circumstances must all be insisted upon, materials should be sought within the localities, improvements should be carried out in stages and the roads should be gradually improved. Specialized teams should be organized, the masses should be initiated, road construction carried out by the local people and subsidized by the state should be combined, and the investment for basic construction, road maintenance funds and capital appropriated by one's own efforts (including agricultural surtax) should be combined.

Under the guidance of unified plans of the Party Central Committee, the overall demands of the plans to be implemented in stages according to the degrees of importance of the projects combining the actual situations of each province, city and autonomous region are as follows: Within 2 to 3 years, all state highways of large and medium sized cities above the state capital level and state highways entering or leaving important ports and industrial and mining bases should be rebuilt according to the standards for first and second class highways. Before 1985, 25,000 kilometers of state highways should be rebuilt according to the standards above third class roads, including 10,000 kilometers of first and second class highways. Bridges should be built across some important crossings. Before 1990, most of the network of state highways should be rebuilt into first, second and third class highways, basically achieving asphalted road surfaces (except for individual roads with a small amount of traffic), the width and the load capacities of bridges should correspond to the standards for highways, drainage system, maintenance and protective work and safety measures should be perfected. The distribution of road maintenance workshops and maintenance squads should be reasonable and should be organized for the entire highway system. On roads where transportation is especially heavy, all efforts should be made to set up automatically controlled signals.

Before 1985, over half of the provincial roads should be rebuilt to meet the second and third class highway standards. Before 1990, most of these roads should meet the second and third class highway standards. On roads where transportation is very heavy, the heavily travelled sections should be rebuilt according to first class highway standards and the quality should reach or approach that of the quality standards of the state highway network.

County and commune roads should be gradually improved to meet the third and fourth class highway standards according to need and feasibility.

II. Drawing Up Plans and Arranging the Plans

Highway reform must have a plan that is practical. The amount of transportation and traffic for the next 15 to 20 years should be calculated according to short term and long term plans of the development of industrial and agricultural production. The present situation of highway traffic should also be included for overall analysis and study. Consideration must be given to objective need and practicality so that a plan for the overall readjustment, improvement and elevation of the standards may be proposed for the distribution of the presently existing highway network, and standards for the types of road foundations, road surfaces, structures and service installations. Efforts should be made towards achieving a rational plan, appropriate standards, full installations, and perfect conditions.

The plan for the rebuilding of state highways should be drawn up by the Ministry of Communications. The plan should be critically reviewed and adjusted according to the opinions solicited from each province, city, autonomous region and concerned departments of the Party Central Committee. The plans for the rebuilding of provincial highways should be drawn up by the communications departments of each province, city and autonomous region. The plans should be reviewed and approved by the people's governments of the province, the city and the autonomous region after soliciting the opinions of concerned departments within the province, each locality and county, and they should also be submitted to the Ministry of Communications for review and be placed on record. Plans for the rebuilding of county and commune highways should be drawn up by the counties, and approved by the bureaus of communications of the province, the city and the autonomous region.

Planning and arrangement of the rebuilding projects should be based on actual need and feasibility. Their degrees of importance should be determined for establishing priorities so that the trunk lines are rebuilt first and then the branch lines, the easy projects are done first and then the difficult projects, and rebuilding should be done section by section and highway by highway. Forces should be centralized so that results can be obtained as soon as possible. The actual projects of rebuilding the state highways should be proposed by the Ministry of Communications according to the national need and in combination with the actual situation of each province and each province should be consulted. These projects could also be proposed by the communications departments of each province according to the needs within the province and submitted to the Ministry of Communications. The projects will then be determined after being approved by the Ministry of

Communications. Rebuilding projects of provincial roads and county and commune highways should be proposed by the highway and communications departments of each province, locality and county. The proposals should be presented for consideration until there is agreement and then they should be submitted to the higher authorities for review and approval and be included in the annual plans for implementation.

III. Technological Standards and Design and Planning

1. The selective use of technological standards for road building should be based upon the principle of combining short and long term situations and rebuilding in stages. In general, the amount of traffic for the next 15 to 20 years should be used as the basis for future projections and these should be combined with the amount of traffic flow, investment and the possible materials of the near future for a rational selection. The standards should be established according to the amount of traffic flow of each section of the highway, and they should not be uniformly established. Road segments that have an annual average traffic flow of over 5,000 vehicle/trips should be surveyed, designed and constructed according to the standards for first class highways. Road segments that have an annual average traffic flow of over 2,000 vehicle/trips should be surveyed and designed as first class highways, when necessary, as parallel north-south type roads, but construction can follow standards for second class roads or above. Land to be used as highways should be prepared according to the standards for first class highways to solve all problems at once, signposts for borders should be set up. Land not immediately used to build roads can be used for greening, cultivation of seedlings and temporarily used for planting by communes and brigades. The standards for rebuilding other state and provincial roads should generally not be lower than third class. Road segments of county and commune highways which are heavily travelled should be rebuilt according to second and third class standards and the rest should be rebuilt according to fourth class standards.

2. The following design and planning can be used for rebuilding road segments having an especially heavy traffic flow: (1) Disperse the flow of traffic, i.e., increase the number of roads entering and exiting cities. (2) Separate the direction of traffic, i.e., widen the foundation and surface of roads, set up a divider in the center of the road, build divided highways. (3) Build parallel roads, i.e., build a parallel road near presently existing roads. (4) Add auxiliary roads, i.e., build auxiliary roads for slow moving vehicles or non-motorized vehicles in addition to presently existing highways. The cross sectional surface of roads can be designed as two pieces, three pieces or four pieces. The form to be used should be selected from technological and economic comparisons.

Width of the road surface and foundation of second and third class highways generally should follow the regulations of the "standards of highway engineering and technology." But road segments in the suburbs of large and medium cities and other places where traffic is heavy can be appropriately widened. In regions where there are many people and a scarcity of land, stone banks along roads, covering the edges of roads with stones, fully paved road surfaces, hardening or asphalting the road shoulders are all methods to widen the foundation of the roads.

3. When building new types of roads and rebuilding the types of roads for highways, technological standards and regulations should be followed. Smoothness

and far sightedness should be emphasized. Repeated changes of the types of roads should never be done. At the same time, old roads should be reasonably utilized under the prerequisite that the technological standards of the roads and highway can be assured. Attention should be paid to conserving the use of land, reduce the amount of construction, and reduce the cost of construction.

4. Design and planning for rebuilding road surfaces should be based on actual objective need, combining the future and the near future requirements and they should be determined after comprehensive consideration. They must fully utilize various industrial wastes. In regions lacking sand and stones, dirt and soil can serve as the bottom layer for roads. New road surfaces of state and provincial roads should be designed according to the future amount of flow of traffic over the next 15 to 20 years to make sure that the bottom layer of road surfaces has enough hardness. The surface layer should mainly be of high grade or high subgrade materials. In regions where sand and stones are abundant, and even if the flow of traffic is light, medium grade road surfaces can be build first. County and commune highways should have mainly medium grade road surfaces. In regions where sand and stones are lacking, and on county roads that are heavily used for transportation, the road surfaces can be asphalted when conditions permit.

Rebuilding of the original high subgrade road surfaces should be profoundly investigated and studied. The demands of the long term future must be taken into consideration and the original road surfaces should be utilized as must as possible. Generally, road segments that have relatively good road surfaces and that require only widening and improvement of the travel capabilities should be rebuilt with a bottom layer of equal strength as the original bottom layer of the road surface. Road segments with subdivided road zone for divided roads should be designed according to the different demands of the different lanes as to the thickness of the road surface.

5. Design and planning for new or rebuilt bridges and culverts should be rationally selected and determined as to the type of structure and the diameter of the bridges. They must all be selected mainly according to economic cost and applicability, and appropriate consideration should be given to appearance. There must be sufficient assurance of the capability to resist flooding. The load bearing standards should be the higher standards among the stipulated classifications for roads. Large bridges, especially with a span of over 25 meters, generally should use qi-20 gua-100 standard to reduce the difficulty of reinforcements in the future. Road segments frequently travelled by heavy vehicles should be calculated for the travel of such heavy vehicles. The width of bridges and culverts generally should be built according to standard. Separated upper structures of bridges can be constructed for highways with divided lanes for vehicles.

Rebuilding of highways should be carried out simultaneously with the rebuilding of bridges and culverts. Bridges and culverts that are in critical condition and dangerous should be rebuilt first. Narrow bridges and short culverts should be widened and lengthened. At crossings and road surfaces that cross water, bridges should be actively built. Bridges with insufficient load bearing capabilities should be reinforced.

6. Design and planning for highway intersections. Intersections of state highways and provincial highways and railroad trunk lines should be gradually

rebuilt into overpasses or split level intersections. Intersections of trunk highway lines generally can use traffic circles at level intersections but where the traffic flow is heavy, they should be actively rebuilt into split level intersections. The intersections of highways and farm village roads have a large traffic flow and cover a wide area. These are the major threats to safety and they affect travelling speed. On state and provincial roads, bridges and culverts which have already been built or are about to be built should be utilized as much as possible. The diameter of the arches of the bridges and culverts should be appropriately increased, and the clearance should be increased and necessary measures should be taken to reduce the need for pedestrians, livestock and non-motorized vehicles to cross highways on the same level as the highways. If it is necessary for them to cross highways, there must be sufficient distance for a clear view to assure safety.

7. Design and planning for the greening of highways. Road segments of all classes of roads suitable for planting trees should be planted with trees according to the regulations concerning forestation and tree planting issued by the state and the demands of the technology for road maintenance. All trees on the shoulders of roads and not adhering to the regulations, all trees on the inside of road bends and near bridge heads and bushes and low trees near railroad crossings should all be cleared away. Greening of divided zones and divided roadways should be with low trees. Different types of suitable trees should be planted at a certain distance in rows along highways.

IV. Construction Method and Quality Demands

Highway rebuilding is a difficult task that is massive, widespread, urgent and which requires a long time to carry out. To hasten the progress of highway rebuilding so that it will produce results as soon as possible, the active factors of all sectors must be fully mobilized and all appropriate construction methods should be used. Many provinces and autonomous regions have organized road teams and launched the "several ones" actively (level one precipitous slope each year, straighten one sharp turn, build one kilometer of standard road segment). Gansu and Shaanxi provinces organized forces for the entire segment or the entire total segment to rebuild old roads, Heilongjiang, Hunan and Hebei provinces relied on the localities and contracted counties to rebuild highways, Liaoning, Shandong, Beijing and Chejiang provinces and city centralized their forces to elevate the class of highways section by section and highway by highway. All of these experiences have been very successful and should be popularized. To assure engineering quality, hasten progress and reduce construction costs, the provincial and local highway departments have established specialized teams as the backbone for construction. This is an effective measure and they should be actively equipped and developed according to need and feasibility.

Construction for the rebuilding of highways must insist on having as principles a long range plan and quality comes first. Inspection and receiving of materials must be strict, construction and operation procedures must be strict, intermediate inspection must be strict, final inspection of the completed projects must be strict. A technical responsibility system must be established and made sound. The highway departments of each province should establish a chief engineer or persons who are technically responsible. Highway departments of each county and each work site should have definite personnel who are technically in charge. Technical cadres must have duties, authority and responsibility. Those who work to assure quality and who complete their tasks with greater, faster, better and more economical results should be praised and rewarded. Incidents involving quality must be thoroughly investigated regarding responsiblity. Careless work and the occurrences of breaking down immediately after repairing should be eliminated. High grade road surfaces that are newly built or being rebuilt should be the result of the technological efforts of the three aspects of scientific research, design and construction. Through experiments and research, efforts should be made so that major repairs will not be needed for 15 years after construction.

V. Capital and Materials for Rebuilding Highways

At present, the state invests little in highway construction. Hastening the rebuilding of highways must be self reliant, and the funds for road maintenance should be fully [illegible]. Each province, city and autonomous region must take effective measures to [illegible] manage and use road maintenance funds well. They must insist on using roads and maintaining roads, and using specific funds for that specific purpose. Funds for rebuilding highways should be arranged according to plan and actively under the prerequisite of meeting the expenditures for regular maintenance of highways, minor and medium repairs and repairs after damage by floods and other [illegible] expenses. Funds for rebuilding of highways at present generally should [illegible] about 30 percent of the funds collected as road maintenance funds. [illegible] income for such purposes increase, the proportion of the funds earmarked for reconstruction should be gradually increased to supplement the deficiency [illegible] investments for basic construction by the state. National defense trunk [illegible] regions where construction is difficult and where individual road [illegible] funds are few and construction of especially large bridges must be included in the plans for investment in basic construction of the provinces, cities and autonomous regions and national defense highways, or the funds should be appropriately subsidized by the state.

The [illegible] of materials needed in rebuilding highways should be actively solved under the principle of developing the two enthusiasms. Materials needed for the rebuilding of state and provincial roads should be included in the plans of the provincial, city and autonomous region planning committees for arrangement and supply in accordance with the regulations stipulated in the joint announcement of the State Planning Commission, Ministry of Communications, Ministry of Finance, the Chinese People's Bank and Document 138 (1978) issued by the State Council. Materials needed for the rebuilding of county and commune highways should be arranged and solved by [illegible] materials of the localities and counties.

The rationing of asphalt and residual oil must adhere to the principles of providing for maintenance and repair first and rebuilding last, main lines first and branch roads last, early old roads first and recent new roads last because of the present deficiency of resources. Each locality should first maintain the conditions of [illegible] roads well to satisfy the needs for maintaining existing asphalt roads. Then, unconnected asphalt roads that serve major trunk lines should be connected, then the road surfaces of busy road segments should be [illegible] to fully utilize the limited resources. Materials for repairing old asphalt roads should be fully utilized. At the same time, all measures should be actively taken to import more asphalt for roads to solve the need for repairing and building high grade road surfaces.

In addition, strengthening maintenance of existing highways and highway administration is an effective measure to firmly establish the results of highway rebuilding and to assure smooth and safe traffic flow, this must be grasped well.

At present, our nation is intensifying socialist construction. To realize decisive achievements in the construction of the four modernizations in the 1980's, we must conscientiously implement the eight point policy for adjusting the national economy under the leadership of the Party Central Committee, hasten the technological rebuilding of presently existing highways and become the vanguards for building the "four modernizations"!

9296
CSO: 4006

REBUILDING TRUNK LINE HIGHWAYS IN SHANDONG PLANNED

Beijing GONGLU [HIGHWAYS] in Chinese No 3, 25 Mar 80 pp 6-9

[Article by the Department of Highways of the Shandong Provincial Communications Bureau: "Preliminary Summary of Technological Rebuilding of Trunk Line Highways in Shandong Province"]

[Text] I. Necessity and Urgency of Rebuilding Old Roads

Shandong is situated in the lower reaches of the Huang He and on the coast of the Yellow Sea and Bohai. It has an area of over 150,000 square kilometers with a population of over 73 million. Because the province has relatively few railroads, conditions for navigation in inland waterways are poor, inland transportation has relied mainly on highways for a long time. At the beginning of the founding of the nation, highway transportation of goods constituted 30.4 percent of the total goods transported within the province. In 1977, this reached 71.1 percent (not including the amount of goods transported socially and not statistically included by the amount of goods transported socially and not statistically included by the communications departments). This shows highways and highway transportation occupy a very important position in our province's national economy.

For the past 30 years, the rapid development of highway transportation has increased the burden of highways and the burden has become heavier and heavier. The number of automobiles for civilian use throughout the province increased by more than 27 times during the past 30 years. Up to 1978, it has increased to 76,801 vehicles. Also, since 1970, the number of farm tractors has greatly increased. Up to 1978, there were already 140,572 units, nearly double the number of automobiles. The number of motorized vehicles per kilometer of highway throughout the province averaged 0.5 units in 1965. Up to 1978, this has increased to 7 units, an increase of 13 times. The amount of goods transported by highways and the traffic flow throughout the province similarly increased greatly. Highway transportation in 1978 was over three times that of 1965. The highway mileage with a daily traffic flow of over 50 motorized vehicles in 1965 was only 31 kilometers (based on surveys of 9588 kilometers). In 1978, this had reached 4,980 kilometers (based on surveys of 16,991 kilometers). This shows the development of traffic and transportation has created higher and higher demands for highways.

But Shandong's highways have a very weak and poor foundation. At the beginning of the founding of the nation, there were only 3,152 kilometers of highways that could barely be traveled. There were only 65 kilometers of all-weather roads. Bridges were lacking. Although our province's highways have developed, the increase in the flow of traffic on highways has made the low standards of the highways even more serious. At the end of 1965, the highways opened to traffic throughout the province totalled 22,166 kilometers, 43 percent of which were not up to the standards of the appropriate class of roads. Only 25 percent were all-weather roads. Less than 1 percent of the highway surfaces were covered by asphalt. Of the 5,259.9 kilometers of highway trunk lines, highways above the third class standards constituted only 64 percent, all-weather highways constituted only 68 percent, asphalt covered highway surfaces constituted only 3.6 percent. There were 19,500 meters which required bridges yet to be built. This situation is extremely out of tune with the demands of the development of traffic and transportation.

The position of highway transportation, the rapid development of highway communication and transportation, the low standards of technology of the highways clearly show the urgency and the necessity of technological rebuilding of highways.

II. Rebuilding Old Roads

Our province began in 1966 to technologically rebuild old roads according to plan, step by step and at key points. Up to 1978, emphasis has been on the work of the following three aspects:

1. Rebuilding the road type and improving the class of roads. Because over 85 percent of the original highways were of third class standard or below, the foundation was too narrow, the road type was too poor, the capacity for travel was low, thus transportation efficiency and travel safety were affected. Therefore we first concentrated forces in rebuilding the road type, widening the foundation and elevating the technological standard of the roads. In implementation, the foundations of all road types that basically satisfied the demands were mostly widened during maintenance and seasonal repairs by county road maintenance stations, road crews and maintenance groups and some road building and logistics works. The roads were partially straightened and their slopes reduced. A total of 5,075 kilometers of such highways were rebuilt. Roads with a poor road type (including substandard roads) were included in the plans for rebuilding for major repairs and for partial or major route changes. Entire segments were rebuilt according to technological standards. A total of 3,911 kilometers of such roads were rebuilt. Of these, 63.8 kilometers reached the first class road standards, 1985 kilometers reached the second class road standards and 1,669 kilometers reached the third class road standards.

2. Building additional bridges and culverts, rebuilding wooden bridges and dangerous bridges. Two methods were used in the building (rebuilding) of new bridges and culverts on trunk line highways: The first method involved the building of new or rebuilding of small individual bridges and culverts. These were all included in the plans of major repairs of each road segment. The road crews of each segment arranged for the repairs and building of these bridges by themselves. According to incomplete statistics, a total of 790 bridges spanning 20,259 meters were newly (rebuilt) built, and 5,105 culverts were built. The second method involved the building of new or rebuilding of bridges on entire road segments and independent large and medium bridges. These were uniformly included in the building of new or rebuilding of bridges on entire road segments and independent large and medium bridges. These were uniformly included in the rebuilding and construction plans of

the province. Each locality arranged for the design and construction. A total of 859 bridges spanning 36,407 meters were newly (rebuilt) built, and 7,316 culverts were built. Up to 1978, all wooden bridges (including bridges with wooden surfaces) on the trunk line highways have all basically been completely rebuilt.

3. Paving road surfaces and exerting efforts to increase the mileage of all-weather roads. Throughout the province, a total of 5,255 kilometers of dirt roads of trunk line highways were improved, 2,294 kilometers of road surfaces were paved with gravel material, 8,943 kilometers of road surface were paved with asphalt. On the average, 550 kilometers of road surfaces were paved with gravel material (including improvement of dirt roads) and 690 kilometers of road surface were paved with asphalt.

Through the work in the three aspects above, the technological conditions of our province's trunk line highways were greatly improved. A comparison of 1978 and 1965 shows that the mileage of the trunk line highways increased from 5,259 kilometers to 14,048 kilometers, an increase of 167 percent. The mileage of all weather roads increased from 3,575 kilometers to 13,199 kilometers, an increase of 269.2 percent. Asphalt road surfaces increased from 187 kilometers to 9,130 kilometers. The number of bridges increased from 1,306 spanning 33,108 meters to 3,425 spanning 143,375 meters. Of these, the number of large bridges increased from 38 to 301. Highways of second class or above increased from 666 kilometers to 2,569 kilometers. Third class highways increased from 2,710 kilometers to 10,513 kilometers. As of the end of 1978, the mileage of all-weather trunk line highways constituted 93 percent of the total mileage, asphalt surface roads constituted 64 percent, permanent bridges constituted 99.7 percent of the total number of bridges. Highways of third class or above constituted 93 percent, the mileage lined by forestation constituted 88 percent.

III. Economic Results

Improvement of the technological situation of highways has begun to produce relatively visible economic results in the efficiency of transportation, in the conservation of tires, accessories and fuel, and in the conservation of work and materials used for road maintenance.

The various indicators compiled by the state-operated transportation enterprises throughout the province for the years 1977 and 1965 are compared in the following:

	1965	1977	
Monthly production of vehicle tonnage (ton kilometer)	4883	6217	+27.3%
Mileage travelled on wheels (10,000 kilometers)	9.8	15.0	+53 %
Mileage between major repairs (10,000 kilometers)	13.2	18.5	+40 %
Repair costs (yuan/1000 ton kilometer)	35.33	17.04	-51.6%

Transportation cost (yuan/1000 ton kilometer)	140.48	109.45	-22.1%
Profit submitted (10,000 yuan)	4764	11,880	+149 %
Average profit per vehicle (10,000 yuan)	1.4	1.8	+30 %

The improvement of the above economic indicators for transportation of course is closely related to the improvement in the operation and management of the enterprises, but they also have a definite relationship with the technological condition of highways. This is more obvious in the following two examples.

According to the analysis of the statistics of the state-run vehicle transportation enterprises throughout the province:

1. In 1963, the total number of vehicle-days was 699,500, the number of vehicle-days not in operation totalled 57,500, or 8.2 percent. Of these, 5 percent were due to rain. In 1978, the total number of vehicle-days was 1,858,000, the number of vehicle-days not in operation was 40,800, or 2.2 percent. Of these, 0.4 to 0.5 percent were due to rain (classical survey numbers). The reduction of vehicle-days not in operation due to rain is a direct result of the increase in the mileage of all-weather highways.

2. Yantai Vehicle Transportation Company is an enterprise with a relatively high standard of management in our province. In 1965, the average mileage travelled was 108,000 kilometers, higher than that of Huimin (98,000), Dezhou (93,000), Liaocheng (97,000), Heze (106,000) companies, but by 1978, the mileage travelled on wheels by the Yantai Company averaged 129,000 kilometers, less than that of Huimin (215,000), Dezhou (183,000), Liaocheng (171,000) and Heze (167,000). We believe the main reason was that in the Yantai area, paved asphalt roads constituted only 19.4 percent while the paved asphalt roads in Huimin, Dezhou, Liaocheng and Heze regions constituted over 50 percent. The trunk line roads in these four regions have all basically been paved by asphalt. The wear on the tires on paved asphalt roads is much less than sand and gravel road surfaces.

Improvement of the technological conditions of highways, especially when the road surface has been paved with asphalt (oil residue), also causes the cost of maintenance to drop by a greater extent. It can be seen from the estimated budgets for small repairs and maintenance of highways per year-kilometer established by our province that the annual kilometer cost can be reduced by 15 to 40 percent. Over 40 percent of the work can be saved and more savings can be realized in sand and gravel materials (see the following table).

IV. Outstanding Problems of the Present Trunk Line Highways and the Task of Rebuilding Highways That Confronts Us

Although the technological conditions of our province's trunk line highways have improved, because the original foundation was too weak and poor, the present highway situation cannot adapt to the present needs of the development of transportation. The major problems are as follows:

Economic Quotas For Minor Repairs and Maintenance Per Year Per Kilometer of Highways

Typography	Daily average	Road surface types	Cost (yuan)	Work (work days)	Sand and gravel material (cubic meters)	Clay (cubic meters)	Asphalt (tons)
Hilly Region	301 - 500 Vehicles	Sand and gravel surface	925	505	115	72	-
		Asphalt surface	797	314	9	-	0.6
	Over 501 Vehicles	Sand and gravel surface	1,254	806	140	80	-
		Asphalt surface	981	388	13	-	0.9
Plains	301 - 500 Vehicles	Sand and gravel surface	1,924	505	80	72	-
		Asphalt surface	1,064	314	9	-	0.6
	Over 501 Vehicles	Sand and gravel surface	-	-	Not determined	-	-
		Asphalt surface	1,366	388	13	-	0.9

1. Highways are few, the standards are low, there are many disconnected roads. There are 34,244 kilometers of highways in our province, there are only 0.22 kilometers of roads in each square kilometer, the density is low, and the trunk line highways constitute less than half the total, and the number of roads are fewer. The entire province has 121 counties (cities, wards), and there are 59 disconnected highways above the county's jurisdiction. Of the 123 trunk line highways throughout the province, there are still five that are not entirely open. There are 34 roads that still have seriously weak links. Of these, there are 601 localities where the slope is greater than 8 percent and there are 123 localities where the sharp turns are less than 15 meters in radius. Most of the trunk line highways are of the third class standard, there are some below the third class standard. As the flow of traffic increases day by day, in mixed traffic, with a low standard of road types and narrow road surfaces, the situation seems more serious. The load standard of bridges is low, the clearance is insufficient, and all these affect travel capacity.

2. The problem of asphalt roads. Of the asphalt roads throughout the province at present, 3,679 kilometers were built before 1970. Of these, 3,131 kilometers are trunk line highways. Because the standard for highways was low at the time they were built, there are about 2,600 kilometers of highways with an asphalt surface thickness of 1.5 centimeters and a width within 6 meters. These highways are mostly major trunk lines with a large flow of traffic. The present flow of traffic averages 1,000 to 2,000 vehicle-trips and they have been used at least 10 to 15 years. Damage and wear are very serious. They must be gradually repaired and rebuilt. Calculating on rebuilding 600 kilometers a year, over 5 years are required. Roads with asphalt pavements built between 1971 and 1975 amount to 4,000 kilometers and the standards are similarly very low and these also need to be repaired and rebuilt gradually.

According to the existing problems mentioned above, the task of rebuilding our province's highways confronting us is very difficult.

V. Several Realizations in the Rebuilding of Highways

Through 13 years of practice and with both positive and negative experience behind us, we realize:

1. Technological rebuilding of trunk line highways is a long term and difficult task. It is an important measure in digging for the potential, renovation and reform of highway transportation. It will be the key work for a fairly long time into the future. It is also an important way to realize modernization of highways. It requires us to exert a lot of effort to study the objective patterns of rebuilding old roads and objective patterns must be insisted upon in doing the work.

2. To hasten rebuilding of the trunk line highways, work must begin from the actual situation and the work on trunk line highways must be arranged in order, and a feasible and practical long term plan must be drawn up and goals must be clearly defined. The roundabout way of doing things must be avoided and conditions should be created to facilitate guiding the localities and the counties to actively exert efforts towards realization of this goal.

3. Insist upon the policy of self reliance and struggle through hardships. One must insist upon relying on the localities, relying on the masses and fully develop the two enthusiasms. Efforts should be concentrated to manage well and utilize well road maintenance funds. Planning for the rebuilding of highways should be based on one's own strength and only in this way can the goals be realized.

4. The relationship between maintenance and rebuilding should be handled well so that unification and preparation can both be taken into consideration and stimulate each other. We believe maintenance will always be the center of highway work. Only by maintaining well the existing highways can the practical demands for transportation be satisfied, and the useful life of existing highways be prolonged. At the same time, forces can be centralized to carry out rebuilding of highways. Funds for maintenance must first be satisfied and must be carefully accounted for to realize actual and practical results and to prevent waste before more funds can be amassed for rebuilding of highways. The work of rebuilding highways must be grasped well, planned projects must be suitable, design and planning must be economical and rational, the quality of construction must be assured, the detrimental side effects of construction must be reduced and efforts must be exerted to eliminate them to reduce the burden of maintenance. The relationship between the two are complimentary and neither should be neglected.

5. In rebuilding highways, the policy of concentrating all forces to win the battle must be implemented. Rebuilding must be done according to plans and line by line and segment by segment as key points. Overly scattered work must be avoided.

VI. Several Problems Concerning Technological Policy and Technological Standards Which Have to be Solved

1. How can the planned periods be correctly grasped? Whether the standard for rebuilding of highways should be based on the demands of short term (5 years), medium term (ten years) or long term (20 years) development, how can these planned periods be combined? How can the first class highways and expressways be combined?

2. In planning the cross section of highways and at road segments of mixed traffic, how should the roads be classified, under what conditions should the one-piece construction method, the two-piece construction method, the three-piece construction method or the four-piece construction method be used?

3. In rebuilding old roads, is it better to rebuild old roads or is it better to open new roads, how can the presently available installations be fully utilized and grasped, and how can traffic during the period of rebuilding be maintained well?

4. How should the bridges of various structural types be fortified or reinforced to increase the load bearing standard?

5. Which principles should be followed in the planning of state and provincial roads, which methods should be used so that the enthusiasm of the localities and counties can be more easily mobilized?

(This article was edited and condensed by the staff of this magazine--editor)
9296
CSO: 4006

INCREASING HIGHWAY BUILDING SAID ESSENTIAL TO ECONOMIC DEVELOPMENT

Beijing GONGLU [HIGHWAYS] in Chinese No 3, 25 Mar 80 pp 10-11

[Article by Liu Chengxian [0491 2110 0341]: "Several Opinions Concerning Strengthening of Highway Construction"]

[Text] Transportation is the artery of the national economy. Highways are the important components of the nation's transportation network. They are belts that tie cities and villages and production and consumption together. Highway transportation, compared to railroad transportation, is more convenient and more versatile. It can "deliver the goods to the door and pick up goods from the home." It can realize direct transport "from door to door." It can also collect and distribute goods transported via other types of transportation such as by air, by rail and by water. It not only is a transportation force indispensible in economic construction, it is at the same time the major form of transportation during time of war. Therefore, highway transportation serves importantly in consolidating national defense, developing the economy, building up of the border regions, promoting unity among the peoples of each nationality and promoting cultural exchange. Highway construction is not only a technological problem and an economic problem it is also more importantly a social problem. In old China, highway communication was extremely backward. After Liberation and after 30 years of construction, our nation's highway communication has changed greatly. The mileage of highways open to traffic throughout the nation at present has already reached over 900,000 kilometers. The percentage of paved road surfaces has reached 73 percent, over 90 percent of the people's communes can now be reached by car, and a highway communication and transportation network centered around each city has been preliminarily established. As highway construction develops, construction of highway bridges also develops rapidly. At present, our nation already has highway bridges spanning over 3 million meters, of these 93 percent are permanent bridges. We have already built 100 permanent highway bridges spanning the famous rivers of the Changjain, Huanghe, Zhujiang and Songhuajiang. In their architectural scale, design and construction technology, there was nothing that could be compared with them before Liberation.

Since the founding of the nation, our nation's highway construction has realized great achievements, but compared to the world's advanced nations, and even compared to some Third World nations, it is still very backward, and it still cannot adapt to the needs of the development of our nation's national economy. The reason is that in the current state plans and management system, highway communication has not yet been placed in the "priority" position which it should be. At present, highway communication's planning is placed with the 19 non-industrial departments such as culture, education and public health. Thus channels for the investment, machinery equipment and material supplies required by highway construction could not be appropriately arranged. And with the many changes in the highway system and confused management, the development of highway construction was seriously affected.

At present, the backward situation of our nation's highways is manifested mainly by the following aspects:

In number, although the mileage of roads opened to traffic has already reached over 900,000 kilometers, it is still behind India. Highway density (the mileage of highways per 1,000 square kilometers) is less than one-seventh that of the United States. At present, there are still two counties and nearly 5,000 communes in our nation that are inaccessible by highways. There are also many unconnected roads between provinces (regions). The rapidity of building bridges is far from satisfying the need. At present, there are nearly 6,000 dangerous bridges throughout the nation that need to be rebuilt and there are over 700 crossings that need to be spanned by bridges.

In quality, the technological standard is low overall, the quality is poor, many of the existing highways are not up to classification standards, and most are third and fourth class roads. Throughout the entire nation there are only several thousand kilometers of first and second class highways, and there are no expressways. Many highway trunk lines shown on maps actually do not have bridges and have only few crossings. There is no complete accessary installations for protection, maintenance and drainage. Therefore, frequently there is no guarantee that they will be open to traffic all seasons of the year. Only 73 percent are paved, and they are mostly sand and gravel road surfaces. High grade and subgrade road surfaces constitute only 23 percent of paved mileage, and most have only oil residue surfaces. Evenness of the road surfaces is generally rather poor, the ride is rough on road surfaces paved with oil residues and sand and gravel roads become dusty when travelled. At present, 25 percent of the highways are without special maintenance personnel. Special maintenance teams at present still mainly depend on manual operations and the degree of mechanization is low. Traffic signals and signs are not uniform and complete. Many localities still do not pay attention to the greening of highways and its management. There are still cases of unauthorized felling and cutting down of trees lining roadways.

In addition, each technological link of surveying, construction and scientific research is far behind those of the world's advanced levels.

In vehicle transportation, because of mixed traffic of various types of vehicles, two-lane roads 6 to 7 meters wide cannot adapt to the demands of transportation, the average speed of automobiles is only 30 kilometers per hour. Except for a few border regions, the present automobile transport capacity is still only capable of "short hauls" and the average distance is only 40 to 50 kilometers. On major economic trunk lines and some highways near large cities, the flow of traffic surpasses the travel capacity of the roads by several times, causing crowded roads and frequent traffic jams and there are many accidents.

If the backward situation mentioned above does not solicit our attention, and if highways are not given priority for development, then the building of the four modernizations will be slowed. To adapt to the nation's economic development, highway construction must have a relatively rapid development.

Because our nation is vast, because there are many people, and because the originally existing highway foundations are extremely weak, there are many problems that have to be solved, and the state cannot provide more investment, raw materials and machinery and equipment for building and maintaining roads at once, therefore, in the present stage, we must still insist on overall planning, unified arrangement, full development of the two enthusiasms of the central and the local authorities. We must insist on implementing self reliance, struggling through hardships, equal emphasis on building and maintaining roads, and combining peace time and war time efforts, rebuilding in stages, gradual improvements, organization of special teams, mobilization of the masses, combining civilian workers and construction details, state investment and income for road maintenance, appropriation of funds by the localities, and combining operation by the people and subsidies by the state and such a series of policies of walking on two legs. The active elements of each sector must be mobilized, and at the same time, the potential of presently existing highways must be greatly exploited to dig for potential, carry out renovation and rebuilding.

Here, the management system of highways must first be reformed. Because the present work force of the highway communications departments has already reached 3 million people, it is one of the sectors of our nation that has a relatively large number of workers and a relatively large area for management. Summarizing the experience of the past 30 years, highway construction and maintenance should be managed at separate levels. This can be done at three levels in accordance with the three levels of state roads, provincial roads and county and commune highways. State roads belong to the central government system, provincial roads are managed by the provinces, cities and autonomous regions, county and commune roads are uniformly planned by each province, city and autonomous region and built and managed by the counties and communes by way of having the people operate them and having the state subsidize them. The management organ at each level should establish specialized and omnipotent agencies that can exercise unified management of planning, zoning, investment, materials, equipment, training of personnel, design, construction, maintenance, highway policy and scientific research for highway construction to thoroughly change the confused situation in present management. At the same time, investment in highway construction should be separated from the 19 non-industrial departments, and a stable and rational proportion should be maintained in the overall investment by the state for basic construction. It is suggested that this should not be below 3 percent of the total investment for basic construction by the state. The supply channels for materials, supplies and machinery equipment should be assured.

The building of highway networks should be based on a general survey and should be fully studied and analyzed to draw up a practical and long term plan, and annual plans should be drawn up according to actual need for gradual implementation and gradual completion so that highway construction can become a modern communication network for the promotion of the four modernizations step by step. At present, highways and bridges urgently needed by key industrial and mining regions, farming and reclamation bases and the economy, national defense and tourism should first be constructed. In addition to the building of four-lane highways or larger highways for automobiles connecting the important cities and towns with ports arranged according to plans along with the expansion of foreign trade, existing highways should be more actively rebuilt to increase the passage capacity. Ordinary trunk line highways should be technologically rebuilt according to the standards for second and third class roads. Road segments near the capital and provincial capitals with oversaturated traffic flow should be technologically rebuilt according to the standards for first class roads. The existing trunk line highways should basically be paved with asphalt, bridges should be made permanent, crossings should be mechanized, road segments suitable for forestation should be planted, road maintenance should be mechanized and semi-mechanized, drainage systems should be perfected, protective engineering work and safety installations should be done, auxiliary roads and unconnected roads should be rapidly connected and crossings should be bridged quickly and dangerous bridges should be torn down. At the same time, construction of county and commune highways should be rapidly carried out, especially the construction of highways through mountain regions. In efforts to coordinate with the needs of agricultural modernization, comprehensive management of mountain regions, irrigation, agricultural fields, forestation and highway construction should be carried out in a big way to strive for completion of 1.2 million kilometers of highways open to traffic throughout the nation before 1985 and realize the goal of connecting every county and every commune by highways and connecting 85 percent of the brigades by highways.

To hasten the technological rebuilding of presently existing highways, we must liberate ideology in highway science and technology, seek truth from facts, respect science, and care about actual results. Based on our nation's situation and the characteristics of highway communications, the advanced experience and advanced technology in our nation and abroad should be learned conscientiously and the standard of management and operating capabilities should be improved. New theories, new technologies, new techniques, new materials should be used to combine creativity and learning so that the technological levels of our highway surveys, construction, maintenance and scientific research can be pushed forward in big strides.

9296
CSO: 4006

PLANS TO REBUILD SHANXI'S HIGHWAYS OUTLINED

Beijing GONGLU [HIGHWAYS] IN Chinese No 4, 25 Apr 80 pp 2-7

[Article by Liu Dayuan [0491 1129 0337] Chief Engineer of the Highway Bureau of the Shanxi Provincial Communications Bureau: "Several Opinions On Rebuilding Shanxi Highways"]

[Text] In the administrative report to the Second Conference of the Fifth People's Congress, Chairman Hua asked us "to exert efforts to rebuild existing highways while actively building new highways." To implement the above directive by Chairman Hua, the following opinions are presented on how Shanxi's existing highways can be rebuilt:

I. Existing Highways Must Be Actively Rebuilt

Since the founding of the nation, Shanxi's highway construction has developed greatly. At present, there are over 31,000 kilometers of highways throughout the province. Not only are major cities and towns connected by highways but 99 percent of the communes and 87 percent of the brigades are connected by highways and cars. The entire province has over 6,000 kilometers of paved asphalt roads and 93 counties and towns are connected by asphalt paved roads. All communes in the counties and cities of Jishan, Quwo, Ruicheng, Huoma, Linfen have been connected by paved asphalt roads. Development of highways has created favorable conditions for elevating the efficiency of transportation, facilitating the people's livelihood, and supporting industrial and agricultural production. According to statistics compiled by the transportation department: In 1965, the transportation cost per 1,000 tons-kilometer was 234 yuan. In 1978, this dropped to 169 yuan, a reduction of 28 percent. In 1965, the vehicle ton-kilometer produced was 31,000 tons-kilometer, in 1978, it was 51,000 tons-kilometer, a rise of 70 percent. In 1965, tires were worn out after travelling 52,000 kilometers; in 1978, tires lasted for 80,800 kilometers. The tire-kilometer wear reduced by 54 percent. The elevation of the quality of the highways is an important reason for realizing the above achievements.

Although our province's highways realized a big development, when objectively compared to the demands upon highways by the construction of the four modernizations, the highways cannot meet the demands. Highway work is still a very weak link in the national economy. Of course, the most outstanding problem is that the standards of existing highways are too low, the quality is too poor, and good road conditions cannot be provided for transportation.

According to regulations, trunk line highways should generally satisfy the standards above those for third class highways. Actually, of our province's existing more than 9,400 kilometers of trunk line highways, only 160 kilometers are of second class roads and 6,050 kilometers (including part of the old sixth class roads) are third class roads, the remaining 2,700 kilometers are fourth class highways and 550 kilometers are substandard. According to the most recent survey of traffic flow, 23.3 percent of the roads are travelled over 2,000 vehicle-trips each day and night. Of these roads, 2 percent are travelled over 6,000 vehicle-trips. In this way, the entire province should have at least about 2,000 kilometers of first and second class roads to satisfy the demands of the present traffic flow. Construction facilities for most of the roads of the province are incomplete, many bridges and culverts are waiting to be built, and two-thirds of the roads cannot be travelled on rainy days.

In recent years, we have concentrated efforts to improve and change some major road segments but the rate of rebuilding is slow, and the needs of the rapidly increasing traffic flow cannot be satisfied. For example, the road segment between Pingding and Jiuguan on the Taiyuan to Shijiazhuang road had an original designed capacity of a maximum of 2,000 vehicle-trips each day and night, but now it is being travelled 3,000 to 5,000 vehicle-trips, the highest reaching 6,000 vehicle-trips, surpassing the designed capacity of the highway by 2 to 3 times. Similar situations are also found on many road segments between Jincheng and Dakou, Yangquan and Yuxian, Taiyuan and Xiuwen. On these road segments that are seriously overloaded, traffic is very heavy, traffic jams have already occurred individually. As of the end of 1978, there were about 50,000 vehicles in the entire province. Calculating on the past annual average increase of 12 percent, the number will reach 160,000 vehicles after 10 years. As the four modernizations are realized, the rate of increase in the future will be even faster. If the highways are not correspondingly rebuilt now, then after a short period of use, many highways will become jammed.

Because the technological standard of the highways is low, the actual travelling speed of automobiles on trunk line highways is generally 30 to 40 kilometers and only 20 to 30 kilometers on county and commune highways. Sometimes automobiles cannot carry a full load because the road surface is narrow and the climbs are steep and the turns are sharp. On many road segments, towing is not possible. These factors greatly limit the transport capabilities and frequently three automobiles are used instead of only two.

Our province is an important coal base. Many coal mines cannot ship out massive amounts of stored coal because the roads are inconvenient. This not only affects the development of the coal industry but power plants at places lacking coal can not generate electricity at full power. Chemical fertilizer plants have been forced to cease production, and the supply of fuel for civilian use is very difficult, while some of our stored coal has accumulated over a long period and self ignition has even occurred.

Because the quality of highways is poor, frequently traffic is halted due to rain and snow. Throughout the province, an average of eight highway traffic accidents occur. In particular, the number of collisions and overturned vehicles has ceaselessly increased. These all have a definite relationship with the narrow foundation of existing highways, poor view of distance and many surface crossings of roads and railroads.

There are also many auxiliary and unconnected roads on existing highways. These roads are not connected, vehicles cannot pass through, and it is very difficult to adapt to the needs of modernization. In particular the exit and entry highways of such cities as Taiyuan, Datong and Yangquan are few, the standards are low, and the conflicts are more outstanding.

Shanxi Province has many tourist attractions and the future for developing tourism is bright, but the present highway situation cannot adapt to the development of tourism.

Transportation is an important component of modernized production and it is the artery of the national economy. Shanxi has many mountains and less water, and basically it does not have inland river transportation. The flow of materials mainly depends upon railroads and highways. If the backward situation of existing highways is not changed as quickly as possible, how can it become the vanguard for the development of the national economy! The time when this problem urgently must be solved has come.

II. Future Policy and the Task of Rebuilding

The basic purpose of rebuilding highways is to raise the standards and quality of existing highways relatively quickly and gradually realize modernization of highway traffic to better serve the four modernizations. To realize this overall goal, the relationship between popularization and improvement and between quantity and quality must be handled well.

In the past, we combined popularization with improvement and followed a policy of taking popularization as they key. Under the guidance of this policy and relying on the localities and relying on the masses, a massive number of highways were built. But, over the past 10 years and more, we have already begun to gradually shift from taking popularization as the key to taking improvement as the key. This can be clearly seen from the changes in the following figures. Before the Cultural Revolution, the whole province had only 357 kilometers of paved asphalt highways. As of the end of last year, this has increased to 5,826 kilometers, an increase of 16 times. The span of bridges increased from 28,600 meters to 78,100 meters, an increase of 2.7 times. Mileage of all-weather roads increased from 2,100 kilometers to 11,100 kilometers, an increase of 5.3 times. During the 10 years between 1969 and 1979, road maintenance projects cost a total of 320 million yuan, of this 240 million yuan was used to rebuild and improve roads, or 75 percent. But between 1970 and the end of last year, highway mileage increased only 3,755 kilometers, an annual average increase of only 417 kilometers. Of this, the increase in mileage in 1978 was only 88 kilometers.

Compared to the past, the quality of highways did improve, but the problem of quality is still the major problem at present. In the density of highways, there are 9.2 kilometers of highways in every 100 square kilometers of land in our nation. The density in our province is 20 kilometers. There are 9.4 kilometers of highways for every 10,000 people in our nation. In our province, there are 13.3 kilometers per 10,000 population. The proportion of highways connecting the people's communes averages 90 percent nationally. In our province it is 99 percent, ranking ninth highest in the nation. But, the proportion of surfaced roads as a percentage of the total mileage of roads averages 73 percent nationally.

In our province it is 48 percent, ranking twelfth in the nation. The proportion of the mileage of all weather roads as a percentage of the total mileage is 67 percent nationally. In our province it is 35 percent, ranking third lowest nationally. This fully shows the number of highways in our province is not small but the quality and the standard are far behind the national levels.

According to the above analysis, our province's future highway construction should clearly insist upon the policy of a combination of popularization and improvement with improvement as the key. A new stage of rebuilding and improvement centered around the development of first and second class roads has already or is about to come.

Of course, there are some old mountain regions at present that are still almost inaccessible. Some local roads need to be built as soon as possible so that the backward conditions of transporting goods by manual efforts and by animals and of the masses of the mountain regions can be liberated. The work of popularizing roads needs to be continued. But this is not the major task anymore.

Since our future policy will emphasize rebuilding, what is the task of rebuilding existing highways? I believe it generally involves the following points:

1. Elevate the technological standard of existing highways so that the travel capacity can satisfy the demands of the development of the flow of traffic.

2. Perfect various construction facilities, pave more road surfaces, raise the ability of highways to resist damage by natural disasters and under ordinary weather conditions, normal flow of traffic must be assured.

3. Adjust the distribution of highways by partially changing routes, completing unconnected roads, further perfecting the provincial highway network centered around state roads and the provincial capital.

4. Improve traffic safety installations, reduce traffic accidents, reduce dust, noise and environmental pollution along highways.

Then, what should we grasp in the near future? I believe before 1985 or 1990, the following projects should mainly be grasped well.

First, forces and investment should be centralized to improve the technological standards of the five major trunk line highways between Taiyuan and Datong, Taiyuan and Yangquan, Taiyuan and Qundu, Taiyuan and Yuncheng, Taiyuan and Dakou. The overly crowded traffic situation on these roads should be solved as a priority to increase the speed of travel. The existing highways from such cities as Taiyuan, Datong, Yangquan, Changzhi, and Linfen should be improved actively. These five trunk line highways are all state and provincial roads. They are the important roads connecting provincial cities and each region and city and the major agricultural and industrial and mining regions. The technological conditions of the five trunk line highways reflect the conditions of the highways of the province in a definite degree.

Second, the provincial committee has decided to build our province into a strong base of coal energy resources and power as soon as possible. In the future, coal will be used as the center to lead the development of other industries. Highway construction will also center around this overall policy and will arrange its own work. Therefore, rebuilding and improvement of roads to serve mainly coal and heavy industries must be given early consideration.

Third, the masses should be actively organized to develop the spirit of self reliance. With massive funding by the state, highways to the old mountain regions which are now still almost inaccessible should be built well. Concretely, this is to basically connect every county by paved asphalt roads, connect every commune by highways and enable most of the bridges to be reached by car.

Fourth, the daily maintenance of existing highways should be actively strengthened to maintain better road conditions on a regular basis, especially road surface conditions to make up for the shortcoming due to the low standards of the highways.

In the next few years, if the above projects can be done well, the situation of our province's highways will show a remarkable improvement.

III. Correctly Select Technological Standards and Rebuilding Plans and rebuilding plans is a very important question, because it relates to investment, speed and usefulness. They must be suited to the dictates of local circumstances, they must differentiate the situations, start out from practicality and be selected carefully after comparison with many aspects.

1. Elevating the technological standard is the fundamental way to elevate the quality of highways. It should be based on the development of traffic flow of the near future and the long term future. Roads of overly low standards should be technologically rebuilt gradually. Trunk line highways generally should not be lower than the third class standard. Roads with a traffic flow of over 2,000 should be considered as second class roads and roads with a traffic flow of over 5,000 should be considered as first class roads. County and commune highways generally should not be lower than fourth class highway standards. According to the demands of the traffic flow of the long term future, there may be many roads that should be rebuilt as second class and first class roads, but at present there is still difficulty in massively developing high grade roads. Therefore measures must be suited to local circumstances and must be grasped in a versatile manner and other measures should be taken, such as strengthening traffic management and changing mixed traffic so that lower class roads can develop a greater potential.

2. A road can also have different standards according to the different amount of traffic flow, or it can be treated differently before and after rebuilding. For example, the Taiyuan and Datong road was surveyed last spring. The daily traffic flow of the Taiyuan and Xiuwen segment was 3,000 to 5,000. The traffic flow between Xiuwen and Dongguan was 1,000 to 2,000. The Dongguan and Xinxian segment had a traffic flow of 300 to 500. The Xinxian and Xiadian segment had a traffic flow of 500 to 1,000. The Xiandian and Jincheng segment had a traffic flow of 1,000 to 2,000 (it was greater than 2,000 near Changzhi), the segment between Jincheng and Dakou had a traffic flow of 1,500 to 3,000. On one road, the distribution of traffic flow was very uneven and the fluctuation even reached nearly tenfold. This shows that the Tiayuan-Xiuwen and Jincheng-Dakou segments need to be rebuilt urgently at present, but the 120 kilometers between Dongguan and Xiadian at present is a third class road and it can satisfy the need of the near future and does not require urgent rebuilding.

3. Some specially important roads must be considered economically and politically. For example, besides considering the travel capacity of the five major trunk line roads of our province, consideration must also be given to raising the speed of vehicles. Therefore I believe the five segments between Taiyuan and Datong, Taiyuan and Yangquan, Taiyuan and Lishi, Taiyuan and Yuncheng, and Taiyuan and Jincheng, from now on, should be determined as not lower than second class standard roads. According to the development of the traffic flow, differentiation must be made prior to and after rebuilding.

4. Disperse the flow of traffic and build parallel roads. For example, the segment between Jincheng and Dakou is in the mountain region and is classified at present as an old sixth class road. Daily flow is 2,000 to 3,000 vehicles, mainly transporting coal from Jincheng and Yangcheng to Henan. If the standard of the original road is elevated, it is very difficult to maintain the present traffic flow during the period of construction. One way is to build a parallel road of third class standard beside the present highway. In the future they can become one divided highway. The second way is to build a highway from Jincheng via Liushukou to Jiaozuo, or from Yangcheng via Sanyao to Jiyuan in Henan. In this way, the flow of traffic on this segment of the highway can be dispersed effectively. On the Pingding to Yangguan segment, if the road from Xiyang via Gaoluo to Xingtai in Hebei is built, vehicles transporting coal in the Xingtai area can mostly use this road, correspondingly reducing the pressure on the Taiyuan and Yangguan road.

Our province is a famous coal base. The flow of coal and the amount of flow of traffic are very much related. Therefore patterns of production and transportation on roads mainly for the transport of coal must be understood so that a rebuilding plan directed towards their characteristics can be determined.

5. Build additional supplementary roads for divided traffic. The distance between Taiyuan and Yuzi is 25 kilometers. At present this road basically qualifies as a second class standard road. Because it is a connecting road between two cities, there are many non-motorized vehicles. Considering the present and the future, it should be qualified as a first class road. If it is not possible to build it into a first class road now, a transition plan can be considered. First, a side road of 7.5 meters in width can be built on the right side of the existing highway for nonmotorized vehicles. Second, a second class road can be built immediately next to the highway, its planal road type must qualify as a first class standard road. In the future, the new road can be used for cars and the old road can be used for tractors, horse carts or as a divided highway. These two plans have both taken into consideration the combination of the near and the long term future so that when the road is rebuilt into a first class road, the present road will basically not be abandoned.

6. Fully utilize old roads. Road segments that have a good road shape and vertical slopes should be planned for widening as much as possible. Except for individual adjustments, generally the vertical slopes and the elevation should not be changed. This method generally requires the least amount of construction work, the cost is low, the work can be done quickly, and in particular, the original road surface will not be damaged, and during the period of construction, traffic will only be affected slightly. In the future, when the road from Yuzi via Taigu to Jiexi is elevated from a third class road to a second class road, this plan should be considered first.

At present, all trunk line highways that qualify as an old sixth class standard road and not too heavily travelled should be fully utilized and should not be rebuilt in the near term.

Fully dig up the potential of road shoulders. At present, the width of the road shoulders constitutes 18 to 30 percent of the total width of the foundation (for second and third class roads). Our nation's characteristic of mixed traffic should be taken into consideration in appropriately reducing the width of the road shoulders and enlarging the width of the road surface. This can increase the travel capacity correspondingly without elevating the classification standard of the road. In the design of the road surface, the thickness of the road shoulder should correspondingly be reduced to save investment.

7. Build in stages. Some roads should have a high standard in view of the long term future. But because of the limitations of the conditions, if it is not possible to rebuild them at once, then consideration can be given to setting a third class standard for the road but constructing it according to fourth class standards, or establishing a second class standard for the road but building it according to third class standards. When determining which roads are to be built during the later periods, measures must be suited to the circumstances required by the road, and decisions should be differentiated.

8. Avoid the difficult and work on the easy roads. On the Taiyuan and Yangguan road, the Taiyuan and Dongshan segment has a complex topography. Based on the present foundation of the old sixth class road, construction to elevate it to a second class road is very difficult. Therefore, consideration can also be given to building a road from Beiying via Peilin and Shitie to connect with the Yuzi and Shouyang road. This plan requires travelling over a longer distance but the topography is good, and in particular, this adds an east bound exit highway for Taiyuan advantageous for peace time and war time.

9. In the suburbs of cities, traffic is mixed and the task of rerouting a road is great, therefore technological standards should be applied in a versatile manner in view of its characteristics, such as appropriately widening the foundation and the road surface of the second class roads to 15 to 16 meters while appropriately reducing the radius of the normal curve.

Highways built especially for tourism generally do not have a large traffic flow and the road type should not be set at too high a standard. The topography should be fully utilized and massive digging and massive filling should be avoided. But the road surfaces, structures and protective facilities should be complete, and all efforts should be made to build a safe and comfortable road and one that blends in with the surrounding environment.

10. In rebuilding, the present situation of trunk line roads going through cities should be changed as much as possible.

11. Rebuilding of county and commune highways should combine management of land, mountains, water, fields, forests, and roads should be uniformly planned.

12. Viewing the present distribution of highways in Shanxi, the roads basically radiate from such cities as Taiyuan, Datong, Yangquan and Changzhi. This

coincides with the present flow of traffic and the distribution is basically rational. But viewing the exit highway from the provincial city of Taiyuan, two roads of better quality towards the west and towards the northwest are lacking. Gujiao and Gengxian to the northwest of Taiyuan will become our province's important coal and steel bases. Therefore, we should change this situation within the near future by rebuilding.

13. During the construction for rebuilding, equal emphasis should be placed on improving the road shape and the road surface. In principle, the trunk line roads should be mainly asphalt roads and county and commune roads should be sand and gravel road surfaces. But measures must be suited to the circumstances of the roads, those that should be paved with asphalt should be paved and those that should be sand roads should be made into sand roads. Some roads will have a greater traffic flow. When sand and stone materials are lacking and when the cost of maintaining the sand and gravel road surface is too high, the road should be paved with asphalt as soon as possible.

Before 1985, the call to connect every county with paved asphalt roads is feasible. But roads to counties in mountain regions that have a very small flow of traffic need not be paved asphalt roads. Because of the limitations of investment and of oil resources, the call for connecting every commune by paved asphalt roads should not be advocated. But county and commune highways leading to commune brigades open to the public and to tourist attractions should still be paved by asphalt.

Our nation's residue oil and bitumen contain more wax. Their regenerative capability is stronger. Therefore efforts should be concentrated to study the regeneration and utilization of old oil surfaces. If this problem can be technologically solved, investment can be conserved and the short supply of asphalt materials can be eased. This should be seriously considered.

In the future, the policy concerning asphalt roads should be to combine development and rebuilding and to firm up and improve existing asphalt roads as the major tasks.

14. Consider split level intersections and tunnels. Our province's existing highways mostly intersect railroads on the ground. As traffic and transportation increase day by day, the effect of railroad crossings upon highway traffic will become more serious day by day. Car and train collisions continuously occur. Therefore, negotiations with the railroad departments are urgently needed to change this situation. Especially major trunk line highways should be changed to split level crossing as much as possible during rebuilding.

Shanxi is mountainous. In the past, in building mountain roads tunnels were seldom considered. Therefore the distances are great, the slopes are steep and the road shape is poor. In the future, plans for the appropriate use of tunnels should be selected after making technological and economic comparisons at places where it is suitable for building tunnels.

IV. On Investment

Rebuilding of highways requires much investment. As for investments, we should solicit them from many places but the funds should be based on road maintenance funds.

During the 10 years from 1969 to 1979, our province's road maintenance cost totalled 621 million yuan. Of this, over 240 million yuan was used for rebuilding and improvement, constituting 40 percent of the total expenditure. If this can be maintained at 30 percent in the future, the useable investment within 10 years will amount to about 500 million yuan (calculated on a 10 percent increase per year). This is the major source of investment for rebuilding highways.

In addition, changing the routes of newly built independent bridges and key road segments should strive for investments for basic construction as much as possible. New construction and rebuilding of national defense highways should strive for investments for national defense highway construction. Construction of major coal transport routes and tourism routes should also strive for investments by coal management departments and tourism departments.

When actively organizing investments, the work in increasing production and conservation should be conscientiously done well. The policy of relying on the localities and relying on the masses which has been effective in the past should be insisted upon, the principles of suiting measures to local circumstances and using local materials should be firmly adhered to, planning must be strengthened, management of all projects must be strengthened, design must be detailed and careful, construction must be careful, unit construction cost of each construction project should be greatly reduced, and construction quality should be emphasized. Only in this way can the various investments be fully utilized.

V. Several Tasks That Should Be Urgently Grasped During the Period of Adjustment

1. Rebuilding old roads is a burdensome task. There must be an overall and scientific rebuilding plan based on seeking truth from facts. The period of the plans should be for the 10 years from 1981 to 1990. Before 1985, short term goals can be established which should be practical and concrete. Highway development serves the entire national economy. Rebuilding plans must be combined with the planning for the development of the national economy. Our province should especially draw up plans in combination with the development of the coal industry. Plans for exit highways from cities must be combined with plans for the construction of the cities. Plans for the construction of county and commune roads should be combined with plans for basic construction of farmland.

In planning, emphasis should be placed on solving the following problems: (1) Our province's provincial road network and each locality's and city's county road network should be planned in accordance with the plans for the national road network. (2) The planning of technological standards for state and provincial roads should be based on technological and economic surveys. (3) All investment items that are possible and needed within the next 10 years should be calculated and estimated. (4) A list of priorities for major construction projects and the different phases of rebuilding should be established.

This work should be assigned to the planning and design departments now and efforts should be made to complete the work within next year. Plans, as soon as they are drawn up and finalized, must be adhered to and they should not be changed at will.

Road segments that are heavily travelled at present should be surveyed and designed as soon as possible and a rebuilding plan should be selected. In general, survey, investigation and design work should be done before other work.

2. The internal proportions should be adjusted according to the eight character policy of the party to "readjust, restructure, consolidate and improve." At present, work should be based on consolidating the existing roads. In recent years, the costs for minor repairs and maintenance have dropped year after year in proportion, from 1969's 34 percent to 1978's 12 percent. The percentage for investments to build new roads and rebuild roads rose from 25 to over 50 percent. Within 10 years, the traffic flow has multiplied several times, maintenance costs per year-kilometer however has not increased correspondingly. This situation affects the quality of maintenance. The proportions of investments for daily ordinary maintenance and minor repairs should be appropriately increased according to the degree of importance and the amount of traffic flow of the roads and on the basis of surveys and research.

The investments for major and medium repairs in road maintenance should be increased so that additional small scale construction urgently needed will be completed, drainage systems should be gradually perfected, and the ability of the highways to resist damage by natural disasters should be increased. In the coming 2 or 3 years, newly built asphalt roads should be appropriately packed. Emphasis should be placed on original asphalt roads, especially old asphalt roads that are approaching the designed limits of years of usefulness. They should be repaved, strengthened and repaired. The experience of Shandong should be learned. The entire road surface of road segments that are heavily travelled should be paved.

The scope of construction of new roads and rebuilding roads should be reduced. Forces should concentrate on completing projects of continuing construction. Within 3 years, new road construction should not be initiated in principle so that projects in construction can be completed as soon as possible; for example the construction of the second class road from Xiaodian to Dongguan should be completed as soon as possible and be open for use.

In the future, investments for rebuilding original highways should be limited to one-third of the total expenditure for road maintenance in our province. This is possible and appropriate.

3. Since the Cultural Revolution, highway work emphasized only engaging in mass movements in a big way, building of special teams and specialized management were neglected. The present task is six to seven times that before the Cultural Revolution. But the agencies and work teams have not been correspondingly strengthened and have been reduced. At present, management personnel, especially technical personnel, not only have a low caliber but the quantity is seriously deficient. Among the workers, there is a lack of technical backbone teams. Construction tasks are most sent down to the localities. cadres are temporarily transferred, and civilian workers and contract work teams are used to complete tasks. The production method is primitive and backward, the standard of management is low, and quality and construction costs cannot be assured. Therefore, an active and cautious attitude must be taken and the organizational system and management system of the present time must undergo necessary readjustment and reformation. Measures should be actively taken to establish a specialized,

hardcore road construction and maintenance team through placement and training to realize the combination of specialized teams and mass movements. Construction that is highly technical should mainly be carried out by specialized teams. If this problem is not solved, we will still continue to make strategic mistakes.

4. Material supply channels for road maintenance work have been stipulated by the Party Central Committee but if we do not exert active efforts, the problems will still remain unsolved. Materials are necessary elements of production. When materials cannot be assured, then even with investment, work can only by half completed.

Equipment, food and labor assurance commodities for the road maintenance worker have not been completely solved and these have become "old and difficult problems." If the situation is allowed to exist for a long time, it will seriously affect the rate of highway rebuilding. These problems should be given serious emphasis. In the near future, forces should be concentrated to solve the problems.

Technological renovation and scientific research work should be launched in a big way. Mechanization and semi-mechanization of road construction and road maintenance should be gradually realized. The present primitive and backward method of production must be changed and work efficiency must be raised. The policy, principles and guidelines of the technology for rebuilding old roads must be studied and solved. The techniques and theory of utilization of original roads, repair and construction of roads in stages, rebuilding of bridges and strengthening of bridges, and reinforcing road surfaces and utilization of road surfaces should be studied. At present, the method of simultaneously carrying out construction and maintaining traffic should be solved urgently through summarizing of experience.

6. Our province has a total of over 31,000 kilometers of highways. There are only over 52,000 motor vehicles. Each kilometer averages less than two vehicles. But because of the low standard of the highways, concentration of the traffic flow, especially mixed traffic, there are still about 20 percent of the trunk line highway that seem to be overly crowded by traffic, and this is even worse near cities. At present, in the composition of traffic on the trunk line highway, tractors and horse drawn carts constitute an average of 21 and 19 percent. Traffic is more chaotic at places where there are more tractors and horse drawn carts. Traffic control must urgently be strengthened. In addition, because of poor management of roads, blasting mountains and rocks on highways, using highways to dry grains and piling miscellaneous objects on highways are very common. Such activities not only damage the highways but seriously affect traffic safety and travel speed. If t[illegible]ation is not changed, no matter how wide and good the roads are, the tr[illegible]peed of vehicles cannot be increased and traffic accidents will not be red[illegible].

Now, the emphasis in the work of supervisory departments is on automobile supervision and they have no time to care about improving and maintaining traffic order. Management of roads mostly does not follow established laws and implementation of the laws is not strict. These problems require urgent and conscientious study to solve them properly.

7. Shanxi is our nation's important coal base and its strategic position is very important. Actively developing highway traffic has very important significance.

In the modernization of highway traffic, what should be modernized first and on what foundation should first be made clear. I believe, if a modernized highway network corresponding to the national economy cannot be built in the near future, there is no way we can talk about modernization of highway traffic, and the four modernizations will necessarily be slowed. Without modernized highways, advanced means of transportation cannot function properly. In comparing the vehicle and the highway, the highway is the foundation. Therefore, the function of highways in the national economy must be further emphasized to establish the highway as the foundation, to push highway work forward and promote the guiding ideology of overall work, strengthen leadership, and actually do the work of building highways and rebuilding original highways well.

9296
CSO: 4006

GOALS OF HIGHWAY MODERNIZATION OUTLINED

Beijing GONGLU [HIGHWAYS] in Chinese No 5, 25 May 80 pp 2-5

[Article by Pan Qi [3382 3825] "Let Everyone Discuss the Question Concerning the Chinese Way of Highway Modernization--An Open Letter to the Editors, Authors and Readers of HIGHWAYS Magazine"]

[Text] I am happy that HIGHWAYS magazine has been revived and I express my enthusiastic congratulations and hope it will become the propogandist and the organizer for promoting our nation's highway modernization on the road of the new long march.

I have read the trial issue and this year's first issue. As a reader, I would like to make a suggestion to open a special column in HIGHWAYS magazine, mobilize the broad masses of staff and workers on the highway front and all comrades who care about our nation's highways to liberate their thinking, to seek truth from facts, to say what they want, and to draw on the collective wisdom and absorb useful ideas. Commissioner Ye pointed out in his "Address to the Rally to Celebrate the 30th Anniversary of the Founding of the People's Republic of China": "We must start out from the actual situation in China, conscientiously study economic patterns and natural patterns, strive towards opening up a road that is suitable to our nation's conditions and characteristics in the realization of modernization." We thus launch a discussion about the question concerning the Chinese way of highway modernization.

Since the crushing of the "gang of four" and specially since the Party's Third Plenum, the frontline of highway work, like every other frontline work of the nation, is thinking of the four modernizations, discussing the four modernizations and exerting efforts to shift one's own work emphasis to the building of socialist modernization.

But, what is highway modernization? What are the goals and the tasks of our nation's highway modernization? To realize modernization of our nation's highways, what road should be followed? How can the emphasis of highway work be shifted to the building of socialist modernization? As the first battle in the four modernizations, how should the eight character policy of "readjustment, restructuring, consolidation and improvement" be implemented in the highway front lines? Of all these questions, some have not been fully considered and solved, views or methods have been found for some but they are not in line with each other, and some even have many different opinions and none seem right. For example:

1. For a Period, Views Regarding Express Highways Have Not Been Consistent, There Have Been at Least the Following Three Viewpoints

One is the belief that to carry out the four modernizations, building express highways is a must, that express highways in our nation "is absolutely necessary," "and without express highways there will be no four modernizations." The other belief is exactly the opposite, saying that it is not necessary for our nation to build express highways, the reason being that "our nation does not have high speed vehicles, therefore it is not necessary to build express highways," "express highways in foreign nations are mainly for small vehicles, our nation does not develop small vehicles, therefore it is not necessary to build express highways," "China has less land and more people, agriculture is still backward, express highways take up too much land, therefore they should not be built," "the cost of building express highways is high, it would be better to build trains"; etc. Another opinion believes that express highways need to be built because they are needed by the four modernizations. But at present, the nation's capital is in short supply. Expressways can only be built gradually in the future. At present, preparatory work in planning, survey and design, technology, talent and management should be done well, and, the advanced experience abroad in the school of thought on design and technological standards have to be learned and the work must start out from the actual situation in China to build Chinese styles express highways.

These all involve a series of important questions concerning technological policy such as the question concerning the relationship between express highways and the four modernizations, the question concerning whether express highways are suited to China's national situation, the question concerning a comparison of the function and the economics and technology of express highways and railways, the question concerning the Chinese type of express highways, etc. These should all be discussed in terms of their theoretical, technological and economic aspects, a careful and detailed technological and economic thesis must be formed to obtain a scientific and truthful conclusion from facts before thoughts can be unified and before any decision can be made to guide the activities.

II. The Question Concerning the Treatment of Farm Village Roads

Some comrades believe farm village roads are only farm village roads and the technological demands are not high and there is nothing that concerns modernization For highway modernization, forces should be concentrated on managing the trunk lines highways, and farm village roads can be left alone or cared for less. There are even more comrades who disagree with this opinion. They believe farm village roads directly serve the development of agriculture, agricultural modernization, and implementation of the order of the national economic policy of developing agriculture, light industry and heavy industry. This question concerns the personal benefits of the broad masses of farmers, concerns the mountain regions of minority nationalities, construction of the mountain regions and old bases, and has a greater function in national defense. The road network in farm villages is an important component of the national highway network. It is the foundation of the national highway network and it is also an indispensible part of highway modernization. Therefore, farm village roads should be taken care of and leadership should be strengthened for all-out development.

This question also involves the content of highway modernization, involves the relationship with agricultural modernization, and in particular it involves the questions concerning the relationship between farm village roads and politics, economy, culture and national defense. Therefore the questions should be clearly discussed to correct thoughts and do the work well.

III. The Question Concerning the Conditions for the Realization of Highway Modernization

Some comrades believe the investment, equipment and materials provided by the state for the highways are few, and there are no objective conditions. Highway modernization can only wait until all the objective conditions exist before it can start. When foreign exchange is lacking, one can only ask the state or borrow from someone else. In general, to carry out modernization, everything must "wait, rely on others and be asked for." Some people even believe that since at present, waiting is in vain, relying on others is not feasible, asking will not be fruitful, thus to engage in highway modernization there must be authority, this means there must be an authority to decide on the plans for highways, investments and material distribution..., otherwise highway modernization cannot be discussed and work cannot be done. Another opinion holds that to realize highway modernization, there must necessarily be objective conditions, but first, besides objective conditions, have we exerted efforts to complete the preparatory work which subjectively we should have been able to complete? If we have not, then even when there are objective conditions, how can the work be realized? Second, do all objective conditions have to be "waited for, relied on others and asked for"? Can some objective conditions be created by relying on our own subjective mobility and by developing the spirit of hard work and creativity? In one sentence, efforts should be exerted now when the objective conditions do not yet exist to prepare for the task fully and to strive towards creating some objective conditions. First one must conscientiously seek truth from facts, begin everything from the practical situation, and the principle of combining theory and practice should be adhered to, start out from the overall situation and the partial situation, the need and the possiblity, the present and the future, the objective and the subjective actualities, conduct surveys and research profoundly, fully obtain information for analytical discussion to obtain scientific conclusions and truly grasp the objectively existing economic patterns and natural patterns, truly carry out the work according to materialist dialectics and historical materialism so that when the state provides investments, makes plans and includes highway modernization on its daily agenda, then the task of highway modernization can be victoriously welcomed with sufficient preparation and with a high standard of technological and managerial levels. As to "authority," the initiative authority in the various aspect mentioned above all exist. In particular, we should ask ourselves first about our own work whether we have truly implemented the above principles and have thus possessed sufficiently convincing "authority" to speak? This question involves a series of questions of principle of the ideological line and the political line and they must be clearly discussed.

IV. The Question Concerning How the Eight Character Policy of "Readjustment, Restructuring, Consolidation and Improvement" Can be Implemented on the Highway Frontline

There are two entirely different ways. One way is the way followed by an engineering bureau. Because this year's investments were reduced, basic construction was set aside and the tasks performed could not make enough income, several thousand people become idle. They depended upon loans of several hundred thousand yuan each month to pass the days, and individual units even distributed the borrowed money as wages and told the workers to take a long vacation and go home. Can this way be called "readjustment, restructuring, consolidation aud improvement"? Can this way suit the needs of highway modernization? The other way is to utilize this opportunity to reorganize the enterprises in a big way and to conduct training for the entire staff. The face of the enterprise can be changed completely from the cadres to the staff and workers, from the leading personnel to the basic level units, and the level of political ideology, the technical level, the level of business and management and cultural levels can all be elevated so that the staff and teams of workers can truly adapt to the needs of highway modernization. At the same time, the spirit of the directives of the Party Central Committee should be followed, i.e., to utilize the present productive capabilities, and based on the needs of the domestic and the international markets, open up the roads for production, increase production, increase financial income, take the initiative in doing work, "find rice for the pot," provide service to the door, develop the enthusiasm, initiative and mobility of the production units and the laborers. Big ways for production should be carried out and small ways for production should also be carried out, accumulating a few into a lot, and accumulating the little things to make something valuable. One should not sit around and wait for the higher authorities to arrange everything and for the state to solve all difficulties.

Accordingly, not only can ways be found domestically, but engineering work to build highways and bridges can be actively contracted abroad and we can even provide labor. This can create more foreign exchange for the state and can also earn full sets of advanced machinery and instruments. Especially important is that this can train a modernized survey and design and construction team equipped with modernized equipment and possessing advanced levels of production, technology and management. After returning home, this team can become the base for further training, popularization and creation. The method of "learning, application, improvement and creation" can also be used to select sample machinery from the advanced equipment earned as model for copying, for renovation, for creation, for test production, and even for batch production, thus leading highway and traffic industries onto the road of modernization. All of these will have served importantly to prepare for highway modernization. Is this an impractical dream? No! Is this something frivolous? No! This is exactly the way towards self reliance, of striving towards strength, hard work and modernization! This is truly implementing the eight character policy of "readjustment, restructuring, consolidation and improvement." The two methods above, positively speaking, will produce two entirely different results. Should they not be clearly discussed?

Examples of such efforts are many and the questions to be discussed are also many. But these few examples are sufficient to show that we have not yet opened the gate to this necessary kingdom of highway modernization. Therefore, it is very important and urgent to launch a discussion of the question regarding a Chinese way to highway modernization. It must be realized that to carry out highway modernization in a land of 9.6 million square kilometers, the task is glorious yet difficult. In this business, problems that have occurred and that will occur are of course many and complex. There is debate supporting different views. This is not surprising, and this is very precious and is needed very much. The question is to develop democracy well and implement the "double hundred" policy, implement the three no's, mobilize the broad masses of staff and workers and all comrades concerned about highways to engage in discussion and to draw on collective wisdom and absorb useful ideas. In this way, people with true knowledge, bright views, true capabilities and knowhow can be discovered, the knowledge and experience for us to realize highway modernization can be greatly enriched, and relatively more correct conclusions can be obtained gradully, the pattern of highway modernization can be grasped, and concrete ways, policies, guidelines and methods can be found for the realization of the task. Therefore, this discussion is needed objectively and subjectively and must be carried out; there are only advantages and there is no harm. It is a task that must be tightly and conscientiously grasped.

The content of the discussion must not be pinned down. As long as it is about the question of our nation's highway modernization, everyone can express his own opinion and say what he wants. But at the same time, comrades who participate in the discussion should be prompted to realize the following:

The first is to truly liberate ideology and start the motor running. The confinement by the remnant poison of Lin Biao and the "gang of four" and various habitual forces must be broken. The effects of stale ideology, lazy thoughts and bureaucratic and subjective and biased opinions should be shaken off. One must dare to bring up problems, clearly express his views, conscientiously study the new situation to truly solve the new problems.

The second is to seek truth from facts and everything should start out from the actual situation. The need must be considered and the possibility must also be considered. The objective conditions must be analyzed and the subjective conditions must also be analyzed. Foreign experience must be studied and the situation in China and the Chinese experience must be studied also.

The third is to develop the spirit of self reliance of striving towards strength and hard work and of creating the future. One must not rely on "waiting, relying and asking." The subjective mobility must be developed and all efforts must be exerted to create conditions for oneself.

The fourth is to follow the principle that practice is the only standard for testing truth. The positive and negative experience in our nation's highway construction for the past 30 years must be summarized conscientiously. Confirm and develop those experiences that benefit highway modernization, learn and improve those lessons that are unfavorable to highway modernization.

The fifth is to refrain from talking emptily, saying what others say, making onlooker's unsolicited comments, and speaking falsely. One must say the truth and be honest. The style of the comments need not be restricted.

Commissioner Ye pointed out in his important address in celebration of the 30th anniversary of the founding of the nation: "All of our work must evolve around this center of construction for modernization and serve this center. The evaluation of the work of and the honors to be given to every region in the nation, every department, every unit and every individual must be judged by the standard of their direct or indirect contribution to the construction of modernization. All cadres and the people of the whole nation must exert all efforts and concentrate all thoughts and seize every minute to engage in this great construction."

Comrades on the frontline of highway work, whether engaged in scientific research, planning and design, communications industries, education, technological information processing, etc, editors, authors and readers of HIGHWAYS magazine, I want to humbly listen to your opinions, wholeheartedly learn from all comrades, and join all comrades in holding this discussion well first, so that this discussion can be lively and rich in ideas and extremely fruitful. I fully believe that by relying on collective wisdom and strength, working and thinking together to provide plans and policies, this eventual kingdom of highway modernization will certainly turn into a kingdom. The glorious goal of highway modernization must be realized on the great continent of the motherland.

Criticism and corrections are welcome as to whether the above suggestion is correct.

April, 1980

Editor's Note:

This suggestion by Vice Minister Pan calling upon everyone to hold a big discussion on the question concerning a Chinese way to highway modernization, we believe, is a very important and fundamental question in the frontline of highway work. The time for holding this discussion is right now and it is entirely necessary. This magazine will set aside a special column starting from the sixth issue for discussion of the problems concerning: What is highway modernization? What are the goals and tasks of our nation's highway modernization? What road should be followed in realizing our nation's highway modernization? How can the eight character policy of "readjustment, restructuring, consolidation and improvement" be implemented? And how can the technological rebuilding of existing highways be hastened? In addition, through all questions related to our nation's highway modernization readers can express their own opinion and say what they want. But the viewpoint must be clear, there must be a basis and empty talk must be avoided. It is hoped that comrades on the frontline of highway work of the whole nation and all comrades concerned about our nation's highways enthusiastically support this call and actively participate in discussion to contribute plans and policies for our nation's construction of highway modernization!

All work received should be marked "Special Discussion Column."

9296
CSO: 4006

TRANSPORTATION

BRIEFS

TIBETAN HIGHWAY SOCIETY--The founding ceremony of the Highway Society of the Tibetan Autonomous Region was held from December 21 to 26, 1979 in Lhasa. Participants numbered 98. It was a lively and active meeting. The mission of this meeting was to implement the spirit of the founding meeting of the Chinese Highway Society, the Scientific Conference of the Tibetan Autonomous Region and the National Scientific Conference, draw up the charter of the Highway Society of the Tibetan Autonomous Region, organize the agencies of the society and the special committees, engage in academic exchange and draw up the plans of academic activities for 1980 and 1981. The participants passed the society's charter with thunderous applause, elected the board of directors and the standing committee, deputy directory Yong Pi [7167 0012] of the traffic department was named chairman of the board. Wen Guoliang [2429 0948 5328] and nine other comrades were named vice chairmen. Yang Zonghui [2799 1350 6540] served concurrently as secretary general. An academic committee and five special committees on railroads, bridges, automobile transportation and road building machinery were set up according to the charter. The meeting engaged in a wide academic exchange. [By Jia Zhaoyu [6328 0340 3842]] [Text] [Beijing GONGLU [HIGHWAYS] in Chinese No 4, 24 Apr 80 p 40] 9296

GUANGZHOU-FOSHAN HIGHWAY--The distance between Guangzhou City and Foshan City is 19 kilometers. It is the only road from Guangzhou to Hainan, Zhanjiang, Zhaoqing, Foshan and some parts of Guangxi. At the same time, it is one of the roads heavily travelled by overseas Chinese and compatriots in Hong Kong and Macau. Along both sides of the road are river networks. The foundation of the road is low, the water level is high, the soil texture is soft. It was originally a 10-meter wide simple asphalt road surface. The day and ninth flow of traffic at present has reached 5,000 to 6,000 vehicle-trips. In addition there are over 15,000 bicycles that use the road. After completion of the road, the residue asphalt road surface has a total width of 18 meters divided into a car lane and a non-motorized vehicle lane. The main car lane is 9 to 10.5 meters wide. The non-motorized vehicle lanes on both sides are 3.75 to 4 meters wide. Along the two non-motorized vehicle lanes are dividers made of cement blocks to prevent bicycles from veering into the main traffic lane. The road surface structure consists of lime soil, cement sand, and lime for reinforcing the foundation, paved with a 10 centimeter layer of crushed stones as a transitional layer, than an even layer of 3 centimeters paved with heated asphalt. The road shoulder has lime piles, gangue, furnace residue and stone powder that compose the cushion layer. An average of over 14,000 tons of materials was used per kilometer. The entire project was completed at the end of last year. At present, it is being used well, and the number of traffic incidents has greatly decreased. The travel speed of vehicles increased from the original over 30 kilometers to 60 kilometers. It is the first divided highway with an asphalt road surface in the Foshan area. [By Wang Pingfang [3769 0769 5364]] [Text] [Beijing GONGLU [HIGHWAYS] in Chinese No 4, 25 Apr 80 p 40] 9296

US PROFESSOR HOLDS CLASS--At the invitation of our Ministry of Education, Professor Heines, an expert on the construction of curved bridges, of the University of Maryland, USA, held a lecture at the Nanjiang Engineering Academy from December 3 to 22, 1979. The participants, including representatives from higher learning institutions in the fields of systems studies, traffic systems studies, city building system studies and railroad systems studies, totalled 101. The lecture, given in 14 segments was mainly based on the theory of the design of curved bridges and it also introduced the contents of the design of the load coefficient method, fatigue and strength calculations, and analysis of inner force of tilted bridges. During the course of the lecture, a massive amount of documentary materials given by Professor Heines was printed and distributed. Via this lecture, bridge construction technology of China and the United States was exchanged, and at the same time it promoted the friendly communication between the peoples of China and the United States. Professor Heines is presently one of the recognized experts on curved bridges. He has profound expertise in the design and study of curved bridges. This lecture will definitely produce an effect upon our nation's building of split level expressway bridges, split level intersecting bridges between cities, and draw bridge construction for especially large bridges in the future. [By Zhuang Haitao [8369 3189 3447] and Shao Rongguang [6730 1369 0342] [Text] [Beijing GONGLU [HIGHWAYS] in Chinese No 4 25 Apr 80 p 40] 9296

CSO: 4006

END

END OF

FICHE

DATE FILMED

Dec. 8 1980

DM